SONY

DIGITAL TIME BASE CORRECTOR

BKU-903

OPERATION AND MAINTENANCE MANUAL

1st Edition

Serial No. 10001 and Higher

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SECTION 1 OPERATION

1-1. Overview

The BKU-903 is a plug-in type time base corrector designed for Sony BVU-950P U-matic video cassette recorders. This time base corrector converts the playback signal of the VTR into a signal which satisfies the broadcast standards. It is composed of a TBC-6 circuit board, and a BVR-50P remote control unit.

Wide window

The window of 31Hp-p enables the correction of jitters over a wide range. Even if the jitters exceed the correction range, horizontal movement nor sync fluctuation will not occur.

8 bits/4 fsc sampling

Playback signals are digitized 8 bits through 4 fsc sampling. This avoids any deterioration of the bandwidth and of the S/N in quantizing.

Synchronization in high-speed playback

When the VTR is in the SHUTTLE mode, playback can be synchronized with the reference signal up to ±5 times the normal speed in color and ±10 times the normal speed in monochrome. Even in the F FWD and REW modes, the synchronization is possible in monochrome.

Built-in digital drop-out compensator

The drop-out compensator compensates for drop-out in either of the Y and C signals by replacing the drop-out section with the 1H previous signal for Y and the 2H previous signal for C. Since signal replacement is performed by a digital processing method, it causes no signal deterioration.

Built-in beat canceller

The beat canceller cancels the residual second beat of the low-frequency conversion chroma sub-carrier in the VTR output, avoiding slanted noise on the monitor screen.

Built-in sync generator

This time base corrector operates either in external or internal synchronization. When an external sync signal is connected, it automatically selects the external synchronization. The sync signal generated by the built-in sync generator is fed out from the REF VIDEO OUT connector of the BVU-950P VTR and can be used as the reference signal for equipment connected to the VTR.

Choice of vertical blanking lines

Any desired lines of lines 7 through 23 can be blanked in vertical blanking.

Built-in signal processing circuit

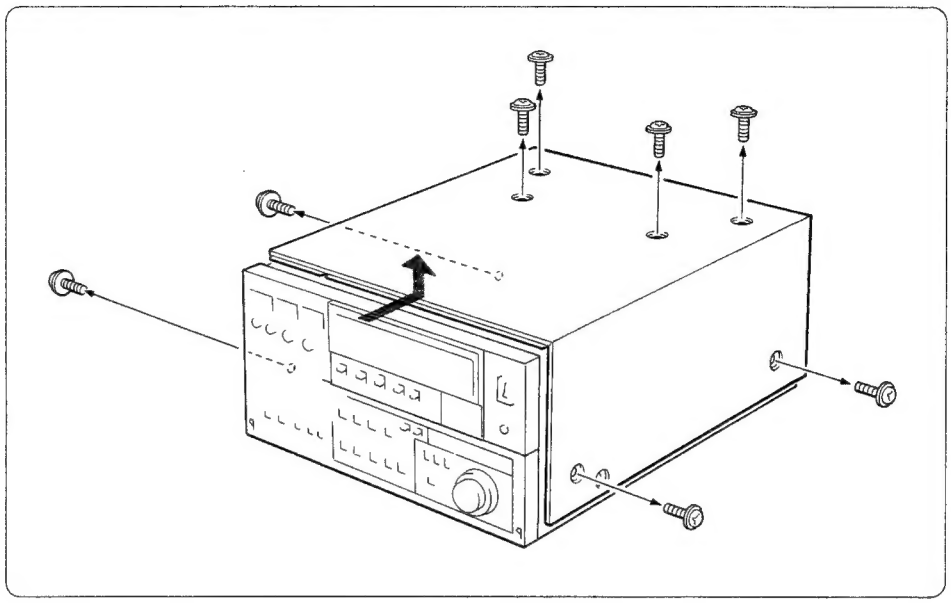
The built-in signal processing circuit permits you to adjust the video level, chroma level, black level, burst/chroma, sync phase and sub-carrier phase on the BVR-50P remote control unit.

1-2. Installation

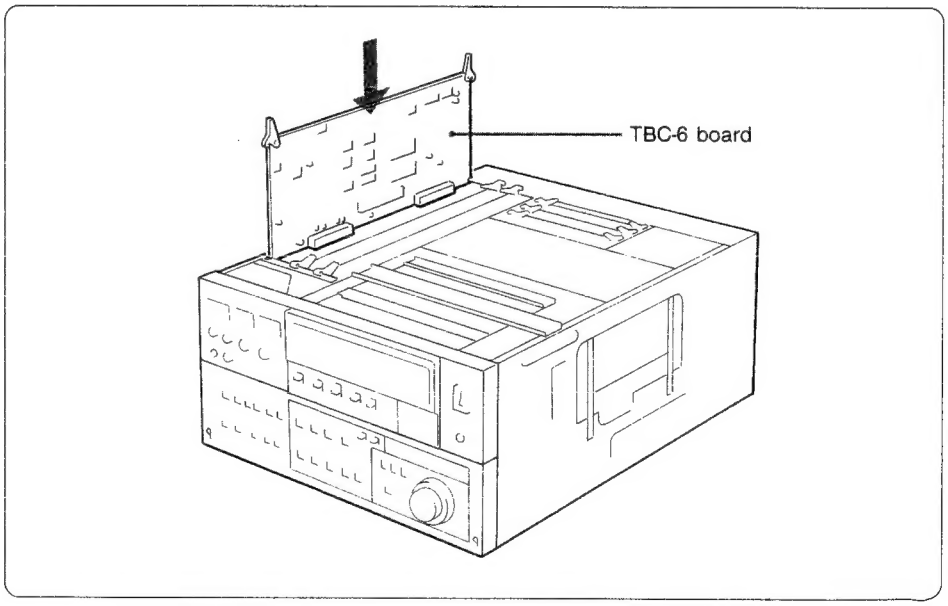
1-2-1. TBC board mounting

1 Turn off the power of the BVU-950P VTR.

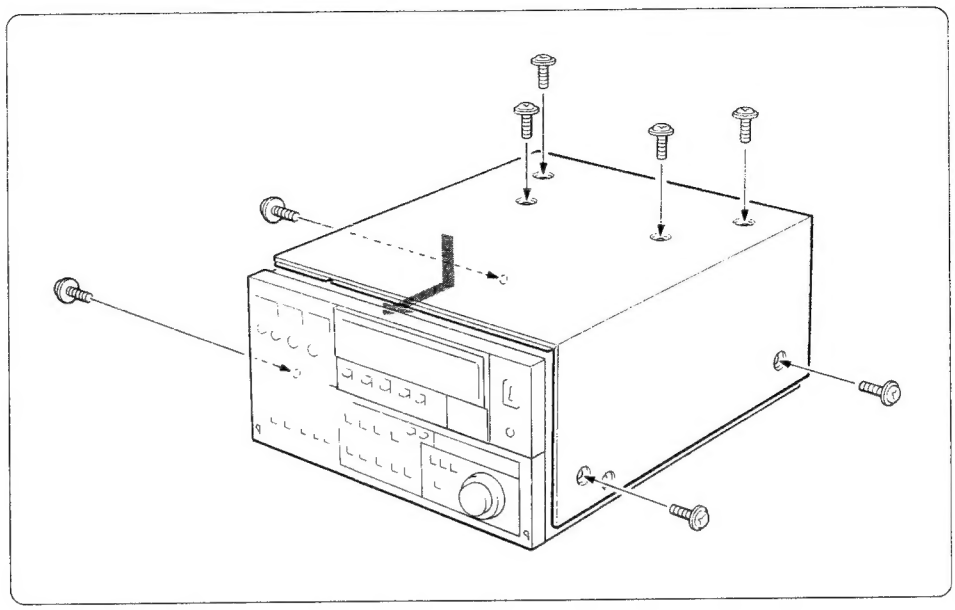
2 Remove the cabinet from the VTR by removing the screws.



3 Mount the circuit board.
Insert it into the leftward slot marked with "TBC" of the VTR.



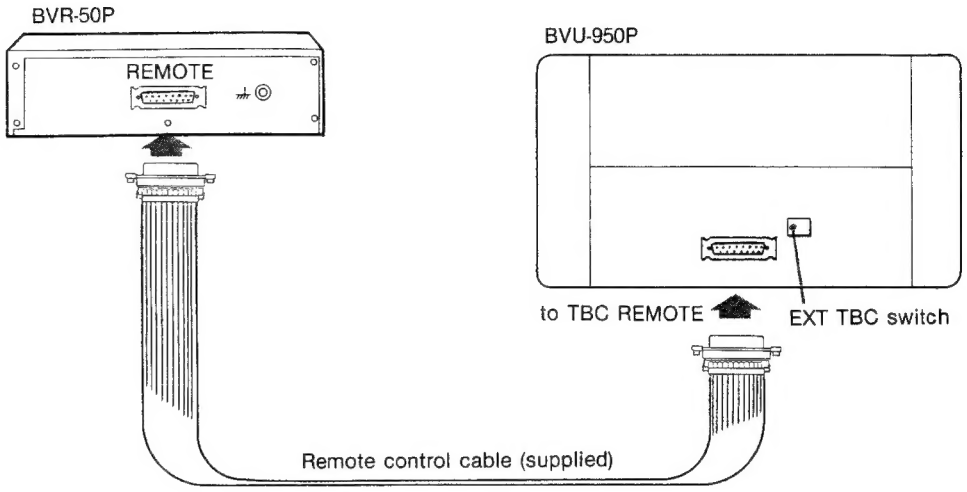
4 Replace the cabinet and secure it with the original screws.



1-2-2. Connection of the BVR-50P

1 Turn off the power of the BVU-950P VTR.

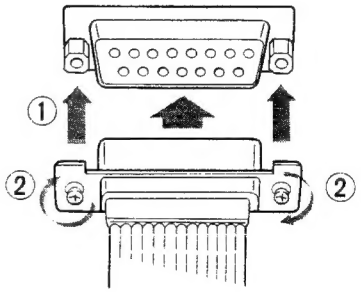
2 Connect the BVR-50P and the VTR using the supplied remote control cable.



Connector connection

① Push in the connector.

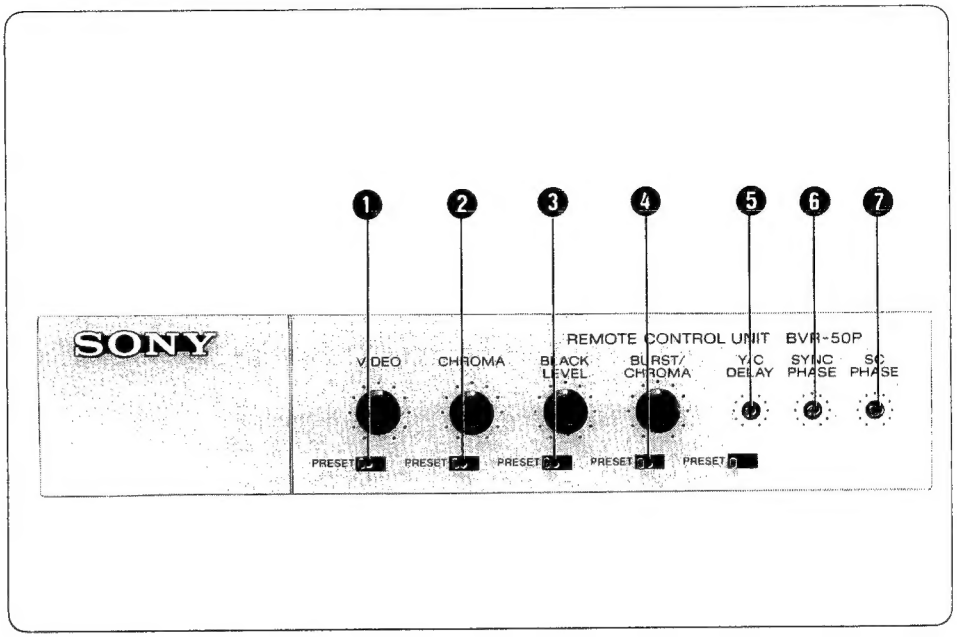
② Tighten the screws to fix the connector.



3 Set the EXT TBC switch of the VTR to OFF.

1-3. Function of Parts

1-3-1. BVR-50P front panel



1 VIDEO level control and PRESET switch
When the switch is set to PRESET, the video level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the video level of the output signal can be varied with the VIDEO control within a range of ±3 dB.

2 CHROMA control and PRESET switch
When the switch is set to PRESET, the chroma level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the chroma level of the output signal can be varied with the CHROMA control within a range of ±3 dB.

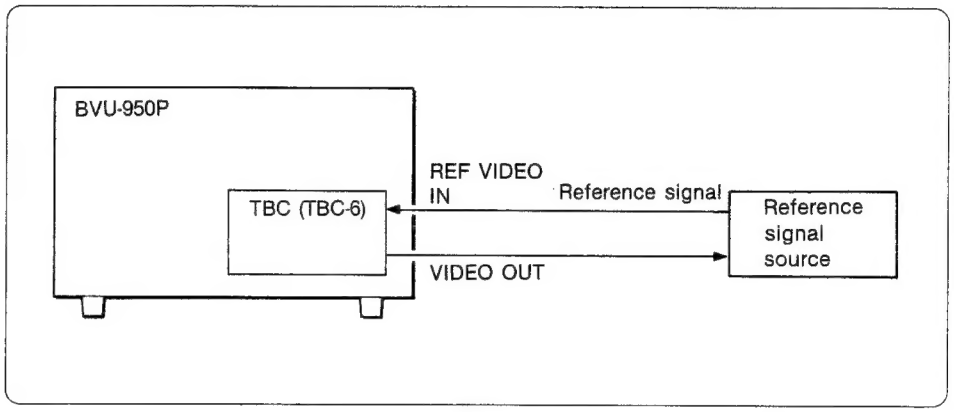
3 BLACK level control and PRESET switch
When the switch is set to PRESET, the black level of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the black level of the output signal can be varied with the BLACK control from 0 to 0.1 V against the input signal.

4 BURST/CHROMA control and PRESET switch
When the switch is set to PRESET, the burst/chroma of the output signal will be the same with that of the input signal regardless of the control setting.
When the switch is set to the opposite side, the burst/chroma of the output signal can be varied with the BURST/CHROMA control within a range of ± 15°.
- The BURST/CHROMA control does not vary the burst phase of the output signal against that of the reference signal.

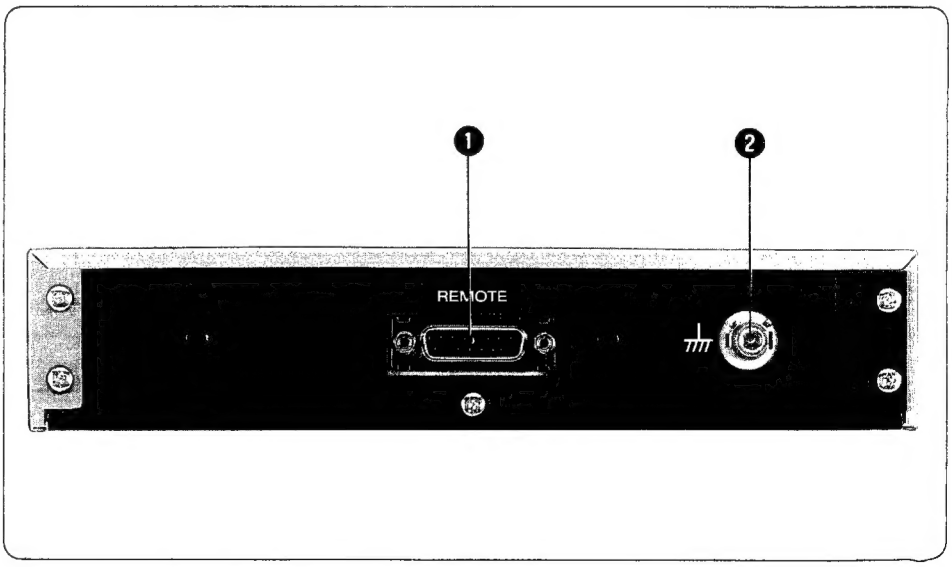
5 Y/C DELAY control and PRESET switch
These control and switch are not operative when the unit is used with the BVU-950P VTR.

6 SYNC PHASE control

7 SC PHASE control
These controls compensate the delay of the sync or sub-carrier signal due to the length of the cable which connects a reference signal source to the VTR.
The adjustable range of the SYNC PHASE control is from −1 to +3 μs.
The adjustable range of the SC PHASE control is 360° and any SC phase of the playback signal can be adjusted to that of the reference signal. The adjustment of the SC PHASE control has no effect on the sync signal phase.
These controls are used when it is necessary to set both of the sync signal phase and the sub-carrier phase of the TBC output to those of the reference signal at the reference signal source by returning the TBC output to the reference signal source as illustrated below.



1-3-2. BVR-50P rear panel



1 REMOTE connector
Using the supplied remote control cable, connect this connector with the TBC REMOTE connector of the BVU-950P VTR.

2 Ground terminal
For frame ground.

1-4. Specifications

Power consumption	20 W
Dimensions (w/h/d)	Circuit board: 420 × 205 × 25 mm (16 5/8 × 8 1/8 × 1 inches) Control unit: 212 × 43.6 × 110 mm (8 3/8 × 1 3/4 × 4 3/8 inches)
Weight	Circuit board: 950 g (2 lb 2 oz) Control unit: 820 g (1 lb 12 oz)
Operating temperature	+5°C to +40°C (+41°F to +104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Video	
Bandwidth	0 to 5.0 MHz ±0.5 dB 6 MHz −3 dB
S/N	55 dB
DG	Less than 2 %
DP	Less than 2°
K factor (2T pulse)	Less than 1 %
Window	31 Hp-p
Residual error	Color: Within ±2.5 nsec Monochrome: Within ±15 nsec
Y/C delay	Within 25 nsec
Processor adjustment range (controlled on the BVR-50P)	
OUTPUT VIDEO level	±3 dB
CHROMA level	±3 dB
BLACK level	0 to 0.1 V
BURST/CHROMA	±15°
SYSTEM SYNC PHASE	−1 to +3 μs
SYSTEM SC PHASE	360°
Supplied accessories	Remote control cable (1) Operation and maintenance manual (1)

Design and specifications subject to change without notice.

SECTION 1 EXPLOITATION

1-1. Aperçu

Le BKU-903 est un correcteur de base de temps de type enfichable spécialement conçu pour les magnétoscopes à cassette Sony U-matic BVU-950P. Ce correcteur de base de temps convertit le signal de lecture du magnétoscope en un signal qui satisfait les normes d'émission. Il se compose d'une plaquette de circuit TBC-6, et d'une unité de télécommande BVR-50P.

Déclenchement périodique étendu

Le déclenchement périodique de 31H c-c assure une correction du frétillement sur une large plage. Même si le frétillement est supérieur à la plage de correction, aucun décentrement horizontal ni fluctuation de synchronisation n'aura lieu.

Echantillonnage de 8 bits/4 fsc

Les signaux de lecture sont numérisés en 8 bits par un échantillonnage de 4 fsc. Ceci évite toute déterioration de la bande passante et du rapport signal/bruit lors de la quantification.

Synchronisation à la lecture à grande vitesse

Lorsque le magnétoscope est en mode "SHUTTLE" (navette), la lecture peut être synchronisée au signal de référence jusqu'à environ ±5 fois la vitesse normale, en couleur, et environ ±10 fois la vitesse normale, en noir et blanc. La synchronisation reste possible en noir et blanc, même en mode "F FWD" (avance rapide) et "REW" (rebobinage).

Compensateur de perte de niveau numérique incorporé

Le compensateur de perte de niveau compense la perte des signaux d'illumination (Y) ou de chrominance (C) en remplaçant la section perdue par le signal précédent 1H pour le signal Y et par le signal précedent 2H pour le signal C. Comme le remplacement du signal est effectué par traitement numérique, il ne provoque aucune déterioration du signal.

Suppresseur de battement incorporé

Il supprime le deuxième battement résiduel de la conversion de basse fréquence de sous-porteuse de la chrominance à la sortie de magnétoscope, ce qui évite tout bruit oblique sur l'écran du moniteur.

Générateur de synchronisation incorporé

Le correcteur de base de temps fonctionne soit en synchronisation externe, soit en synchronisation interne. Lorsqu'un signal de synchronisation externe est raccordé, il choisit automatiquement la synchronisation externe. Le signal de synchronisation, engendré par le générateur de synchronisation incorporé, est fourni par le connecteur REF VIDEO OUT du magnétoscope BVU-950P et peut être utilisé comme signal de référence pour tout appareil raccordé au magnétoscope.

Choix de lignes de suppression verticale

Toute ligne comprise entre 7 et 23 lignes peut être supprimée grâce à la fonction de suppression verticale.

Circuit de traitement de signal incorporé

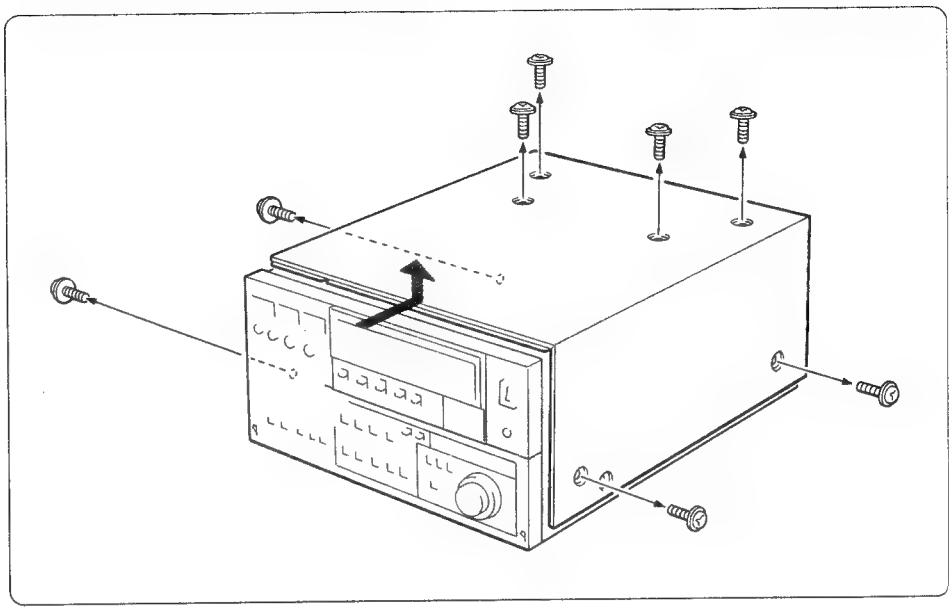
Le circuit de traitement de signal incorporé permet à l'utilisateur d'ajuster le niveau vidéo, le niveau de chrominance, le niveau du noir, la salve/chrominance, la phase de synchronisation et la phase de sous-porteuse par l'unité de télécommande BVR-50P.

1-2. Installation

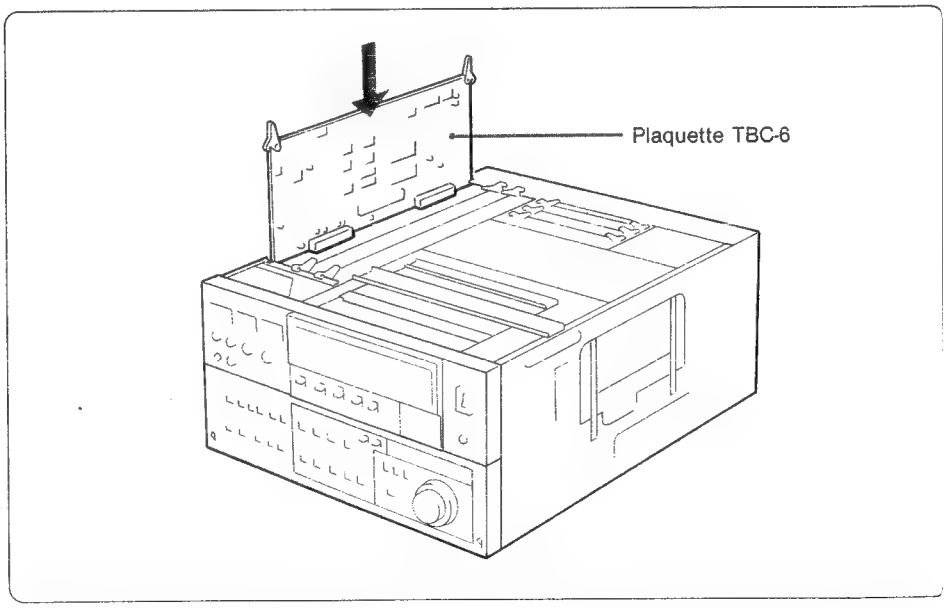
1-2-1. Mise en place de la plaquette de circuit CBT

1 Mettre le magnétoscope BVU-950P hors tension.

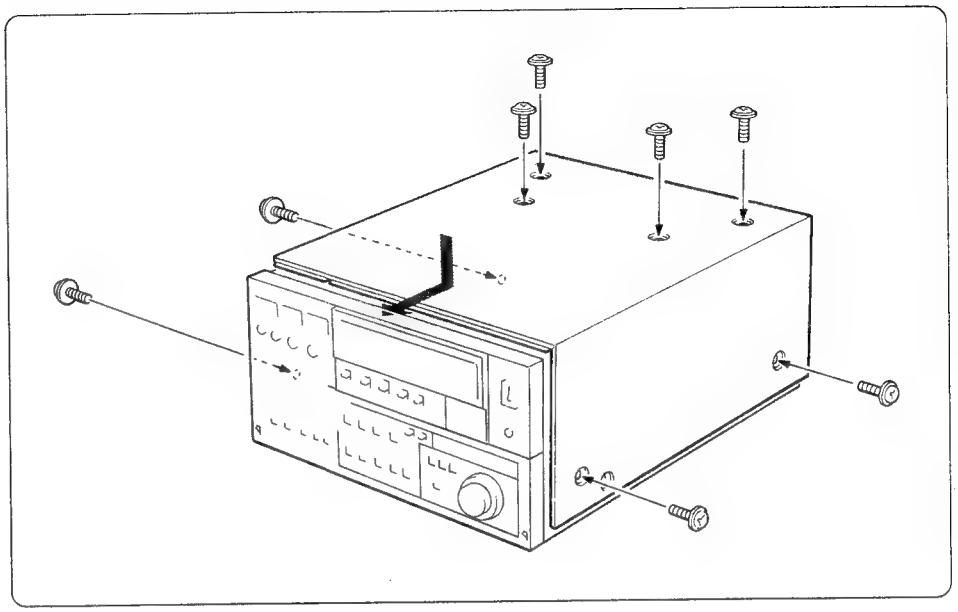
2 Déposer le coffret du magnétoscope en retirant les vis.



3 Installer la plaquette de circuit.
L'insérer dans la fente gauche, marquée par la mention "TBC", du magnétoscope.



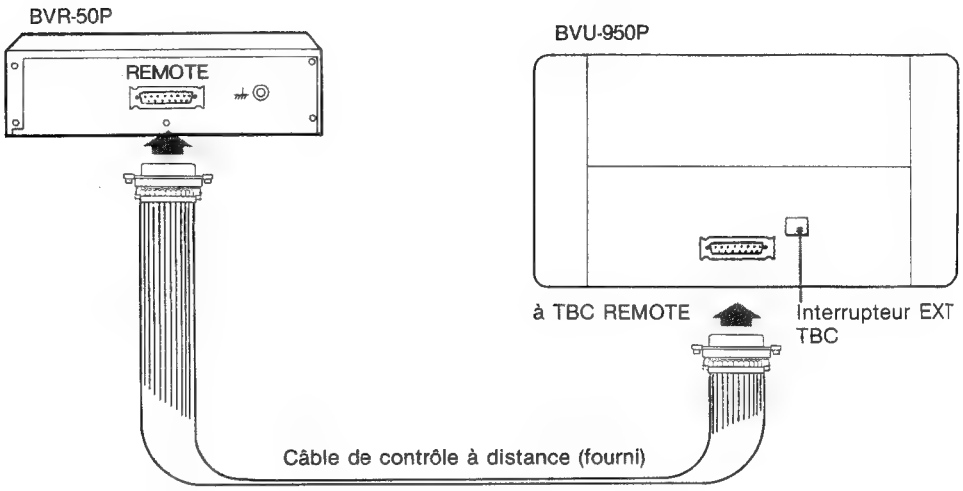
4 Remettre le coffret en place et le fixer en serrant les vis d'origine.



1-2-2. Connexion de la BVR-50P

1 Mettre le magnétoscope BVU-950P hors tension.

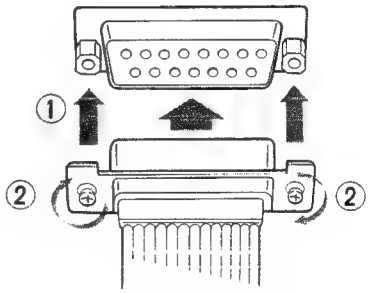
2 Raccorder la BVR-50P et le magnétoscope à l'aide du câble de contrôle à distance fourni.



Connexion du connecteur

① Enficher le connecteur.

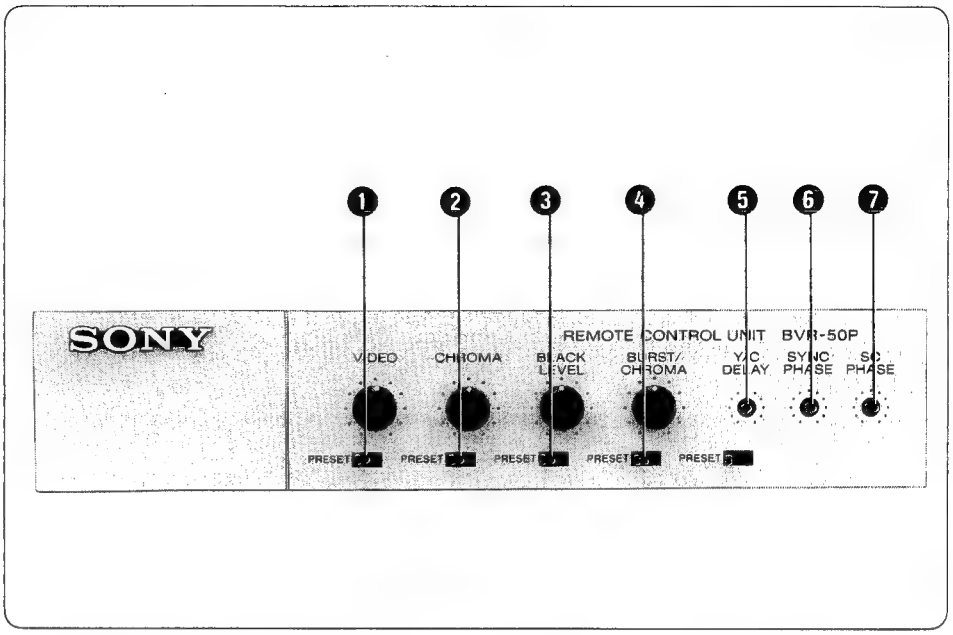
② Serrer les vis pour le fixer fermement.



3 Commuter l'interrupteur EXT TBC du magnétoscope sur arrêt (OFF).

1-3. Fonction des commandes

1-3-1. Panneau avant de la BVR-50P



1 Réglage de niveau vidéo (VIDEO) et interrupteur de préréglage (PRESET)
Lorsque l'interrupteur est commuté sur PRESET, le niveau vidéo du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.
Lorsque l'interrupteur est commuté sur l'autre côté, le niveau vidéo du signal de sortie peut être modifié par le réglage VIDEO dans une plage de ±3 dB.

2 Réglage de niveau de chrominance (CHROMA) et interrupteur de préréglage (PRESET)
Lorsque l'interrupteur est commuté sur PRESET, le niveau de chrominance du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.
Lorsque l'interrupteur est commuté sur l'autre côté, le niveau de chrominance du signal de sortie peut être modifié par le réglage CHROMA dans une plage de ±3 dB.

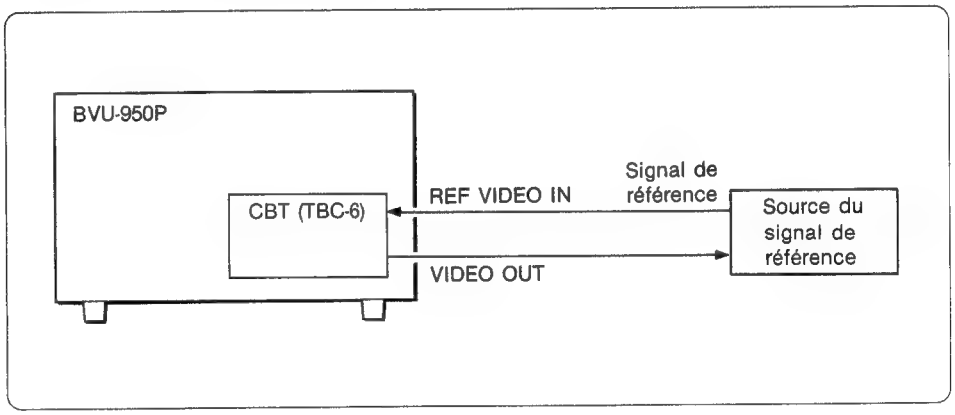
3 Réglage de niveau du noir (BLACK) et interrupteur de préréglage (PRESET)
Lorsque l'interrupteur est commuté sur PRESET, le niveau du noir du signal de sortie est identique à celui du signal d'entrée, indépendamment du réglage.
Lorsque l'interrupteur est commuté sur l'autre côté, le niveau du noir du signal de sortie peut être modifié par le réglage BLACK de 0 à 0,1 V par rapport au signal d'entrée.

4 Réglage de salve/chrominance (BURST/CHROMA) et interrupteur de préréglage (PRESET)
Lorsque l'interrupteur est commuté sur PRESET, la salve/chrominance du signal de sortie est identique à celle du signal d'entrée, indépendamment du réglage.
Lorsque l'interrupteur est commuté sur l'autre côté, la salve/chrominance du signal de sortie peut être modifiée par le réglage BURST/CHROMA dans une plage de ±15°.
- Le réglage BURST/CHROMA ne modifie pas la phase de salve du signal de sortie par rapport à celle du signal de référence.

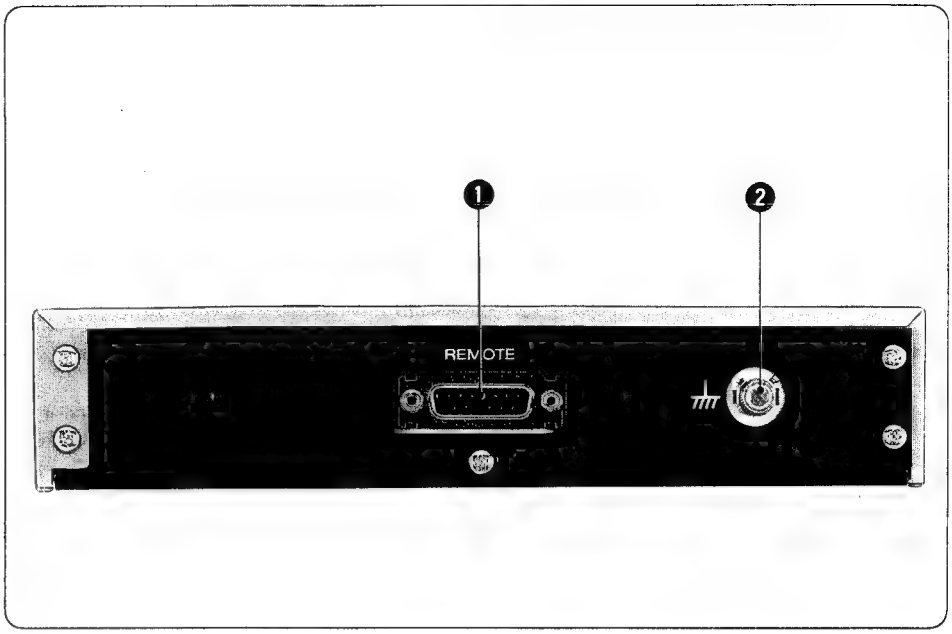
❺ Réglage de retard d'illumination/chrominance (Y/C DELAY) et interrupteur de préréglage (PRESET)
Ce réglage et cet interrupteur sont inopérationnels lorsque l'appareil est utilisé avec un magnétoscope BVU-950P.

❻ Réglage de phase de synchronisation du système (SYNC PHASE)

❼ Réglage de phase de sous-porteuse du système (SC PHASE)
Ces réglages compensent le retard du signal de synchronisation ou de sous-porteuse dû à la longueur du câble qui raccorde la source du signal de référence au magnétoscope.
La plage de variation du réglage SYNC PHASE est comprise entre -1 et $+3$ μs. La plage de variation du réglage SC PHASE, quant à elle, elle est de 360° et toute phase de sous-porteuse du signal de lecture peut être ajustée sur le signal de référence. L'ajustement du réglage SC PHASE n'affecte pas la phase du signal de synchronisation.
Ces réglages sont utilisés lorsqu'il est nécessaire de régler la phase du signal de synchronisation et la phase de sous-porteuse de la sortie CBT sur celles du signal de référence à la source du signal de référence, en y renvoyant la sortie CBT comme illustré ci-dessous.



1-3-2. Panneau arrière de la BVR-50P



1 Connecteur de télécommande (REMOTE)
A l'aide du câble de contrôle à distance, fourni, raccorder ce connecteur au connecteur TBC REMOTE du magnétoscope BVU-950P.

2 Borne de masse
Destinée à la masse du coffret.

1-4. Spécifications

Consommation	20 W
Dimensions (l/h/p)	Plaquette de circuit: 420×205×25 mm (16 5/8×8 1/8×1 pouces) Unité de contrôle: 212×43,6×110 mm (8 3/8×1 3/4×4 3/8 pouces)
Poids	Plaquette de circuit: 950 g (2 liv. 2 on.) Unité de contrôle: 820 g (1 liv. 12 on.)
Température de fonctionnement	De +5°C à +40°C (de +41°F à +104°F)
Température d'entreposage	De −20°C à +60°C (de −4°F à +140°F)
Image	
Bande passante	De 0 à 5,0 MHz ±0,5 dB 6 MHz −3 dB
Signal/bruit	55 dB
Gain	Inférieur à 2 %
Phase différentielle	Inférieure à 2°
Facteur K (impulsion 2T)	Inférieur à 1 %
Déclenchement périodique	31H c-c
Erreur résiduelle	Couleur: pas plus que ±2,5 nsec Noir et blanc: pas plus que ±15 nsec
Retard d'illumination/chrominance	Pas plus de 25 nsec.
Plage d'ajustement du traitement (contrôlée par la BVR-50P)	
Niveau de sortie vidéo	±3 dB
Niveau de chrominance	±3 dB
Niveau du noir	De 0 à 0,1 V
Salve/chrominance	±15°
Phase de synchronisation du système	De −1 à +3 μs
Phase de sous-porteuse du système	360°
Accessoires fournis	Câble de contrôle à distance (1) Manuel d'exploitation et d'entretien (1)

La conception et les spécifications sont modifiables sans préavis.

TEIL 1 BETRIEB

1-1. Merkmale

Der BKU-903 ist ein steckbarer Time-Base-Corrector für Sony U-matic-Videorecorder BVU-950P. Der aus der Leiterplatte TBC-6 und der Fernsteuereinheit BVR-50P bestehende TBC wandelt das Videorecorder-Wiedergabesignal in ein sendefähiges Signal um.

Großes Fenster

Durch das große Fenster von 31 Hss werden Jitter-Fehler über einen großen Bereich korrigiert. Selbst wenn die Jitter-Fehler den Korrekturbereich überschreiten, kommt es weder zu einer Horizontalverschiebung noch zu Synchronisationsstörungen.

8 Bit/4 fsc-Abtastung

Die Wiedergabesignale werden mit 8 Bit, 4 fsc abgetastet. Es kommt dabei weder zu einer Einschränkung der Bandbreite noch zu einem durch Abtastrauschen verschlechterten Signal-Rauschabstand.

Synchronisation bei Wiedergabe mit hoher Geschwindigkeit

Im SHUTTLE-Betrieb kann das Videorecorder-Wiedergabesignal bis zur ±5fachen Normalgeschwindigkeit (bei Farbe) bzw. ±10fachen Normalgeschwindigkeit (bei Schwarzweiß) mit dem Referenzsignal synchronisiert werden. Im Schwarzweißbetrieb ist selbst im Vor- und Rückspulbetrieb eine Synchronisation möglich.

Eingebauter Drop-Out-Kompensator

Der Drop-Out-Kompensator gleicht Fehlstellen im Y- und C-Signal aus, indem er sie durch ein um 1H vorher liegendes Signal (Y) bzw. um 2H vorher liegendes Signal (C) ersetzt. Da dieser Prozeß digital erfolgt, entstehen keine Signalbeeinträchtigungen.

Eingebauter Oberwellen-Unterdrücker

Die zweite Oberwelle des herabgesetzten Chroma-Hilfsträgers wird im Videorecorder-Ausgangssignal unterdrückt, so daß Schrägfehler auf dem Monitorschirm vermieden werden.

Eingebauter Synchronsignal-Generator

Der Time-Base-Corrector arbeitet wahlweise mit externer oder interner Synchronisierung. Bei Anschluß eines externen Synchronsignals schaltet er automatisch auf externe Synchronisation um. Das vom internen Generator erzeugte Synchronsignal wird über die REF VIDEO OUT-Buchse des Videorecorders BVU-950P abgegeben und kann als Referenzsignal für andere, am Videorecorder angeschlossene Geräte verwendet werden.

Wahl der Vertikal-Austastzeilen

Eine beliebige zwischen Zeile 7 und 23 liegende Zeile kann ausgetastet werden.

Eingebauter Signalprozessor

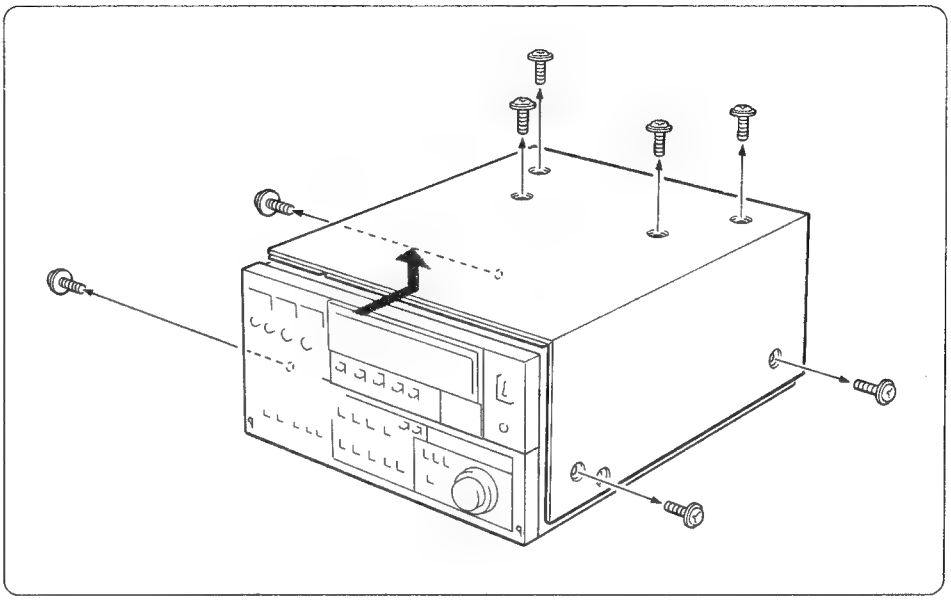
Der eingebaute Signalprozessor ermöglicht eine Einstellung des Videopegels, des Chromapegels, des Schwarzpegels, der Burst/Chroma-Phase, der Synchronphase und der Hilfsträgerphase an der Fernsteuereinheit BVR-50P.

1-2. Installation

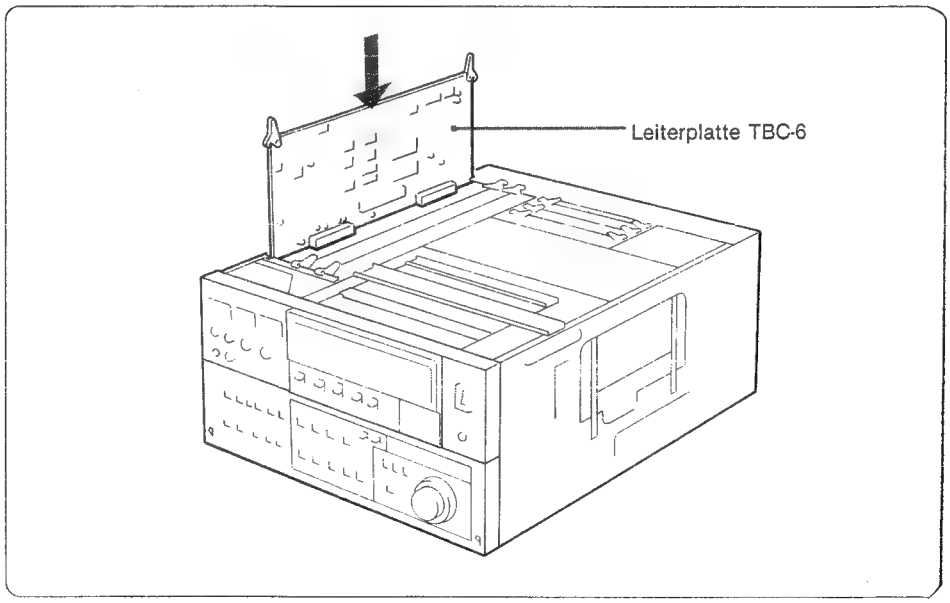
1-2-1. Einsetzen der TBC-Leiterplatte

1 Schalten Sie den Videorecorder BVU-950P aus.

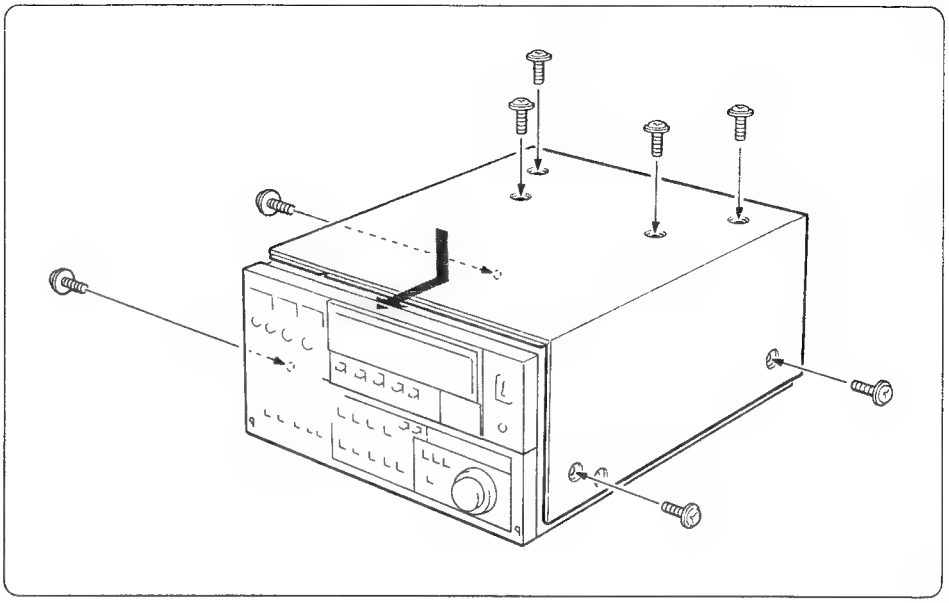
2 Entfernen Sie die Schrauben und nehmen Sie das Gehäuse des Videorecorders ab.



3 Setzen Sie die Leiterplatte ein.
Die Leiterplatte ist in den ganz links befindlichen, mit TBC bezeichneten Schlitz einzusetzen.



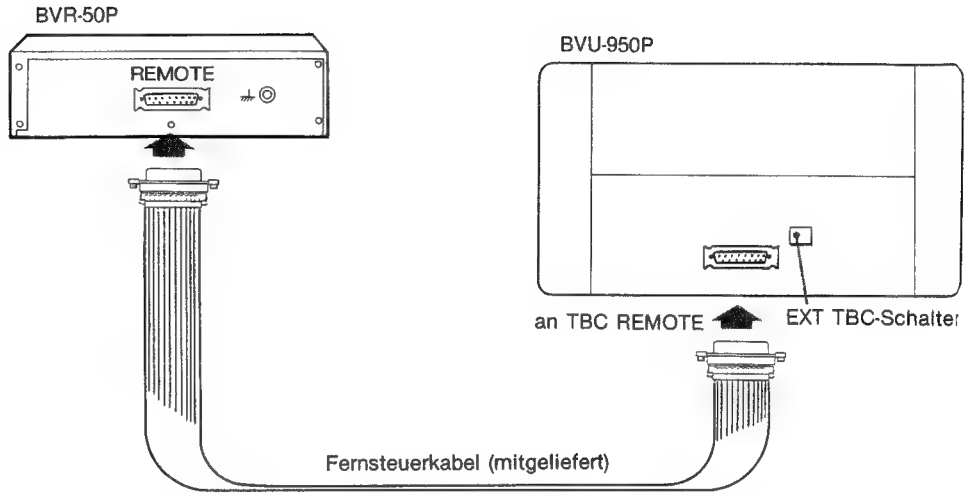
4 Bringen Sie das Gehäuse wieder an und sichern Sie es mit den Originalschrauben.



1-2-2. Anschluß an die BVR-50P

1 Schalten Sie den Videorecorder BVU-950P aus.

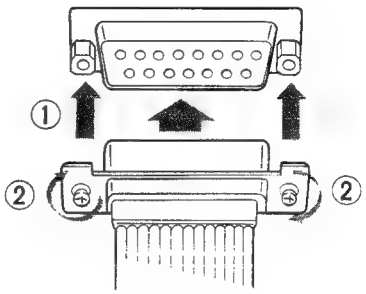
2 Verbinden Sie die BVR-50P und den Videorecorder über das mitgelieferte Fernsteuerkabel.



Verbindungskabel

① Den Stecker einstecken.

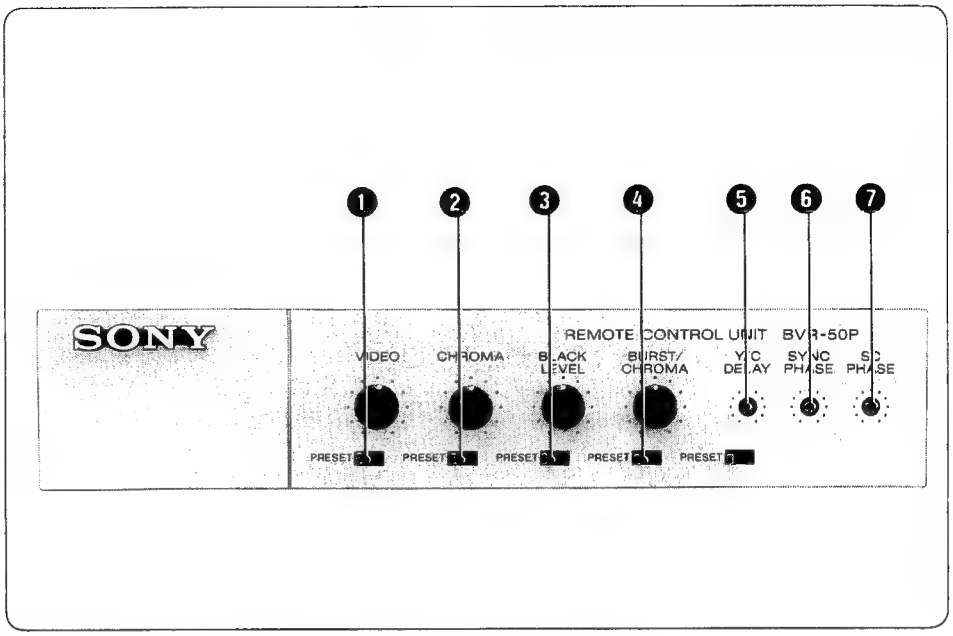
② Den Stecker mit den Schrauben sichern.



3 Stellen Sie den EXT TBC-Schalter des Videorecorders auf OFF.

1-3. Funktion der Teile

1-3-1. Vorderseite der BVR-50P



1 Videopegelregler (VIDEO) und Festwertschalter (PRESET)
Wenn der Schalter auf PRESET steht, weist das Ausgangssignal den gleichen Pegel auf wie das Eingangssignal, unabhängig von der Einstellung des Reglers. In der anderen Schalterposition kann der Videopegel des Ausgangssignals am VIDEO-Regler in einem Bereich von ±3 dB variiert werden.

2 Chromapegelregler (CHROMA) und Festwertschalter (PRESET)
Wenn der Schalter auf PRESET steht, weist der Chromapegel im Ausgangssignal den gleichen Wert auf wie im Eingangssignal, unabhängig von der Einstellung des Reglers.
In der anderen Schalterposition kann der Chromapegel des Ausgangssignals am CHROMA-Regler in einem Bereich von ±3 dB variiert werden.

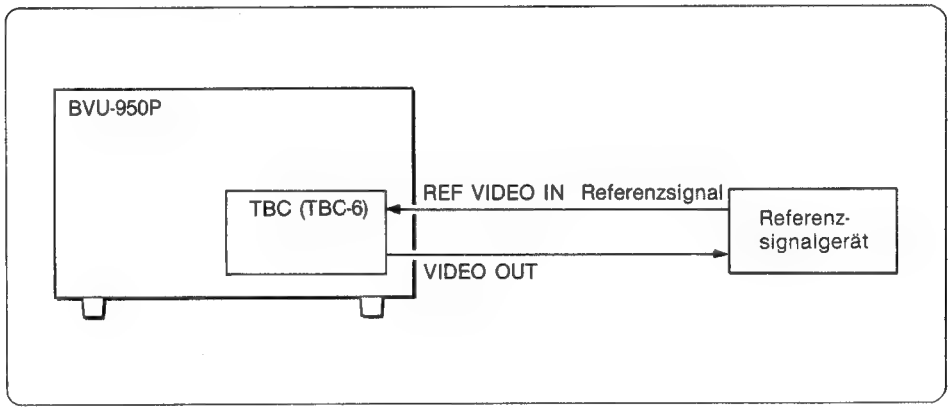
3 Schwarzpegelregler (BLACK) und Festwertschalter (PRESET)
Wenn der Schalter auf PRESET steht, weist der Schwarzpegel im Ausgangssignal den gleichen Wert auf wie im Eingangssignal, unabhängig von der Einstellung des Reglers.
In der anderen Schalterposition kann der Schwarzpegel des Ausgangssignals am BLACK-Regler um 0 bis 0,1 V gegenüber dem Eingangssignal geändert werden.

4 BURST/CHROMA-Regler und Festwertschalter (PRESET)
Wenn der Schalter auf PRESET steht, weist die Burst/Chroma-Phase im Ausgangssignal den gleichen Wert auf wie im Eingangssignal, unabhängig von der Einstellung des Reglers.
In der anderen Schalterposition kann die Burst/Chroma-Phase des Ausgangssignals am BURST/CHROMA-Regler in einem Bereich von ±15° variiert werden.
- Durch Drehen des BURST/CHROMA-Reglers wird die Burstphase des Ausgangssignals nicht gegenüber dem Referenzsignal geändert.

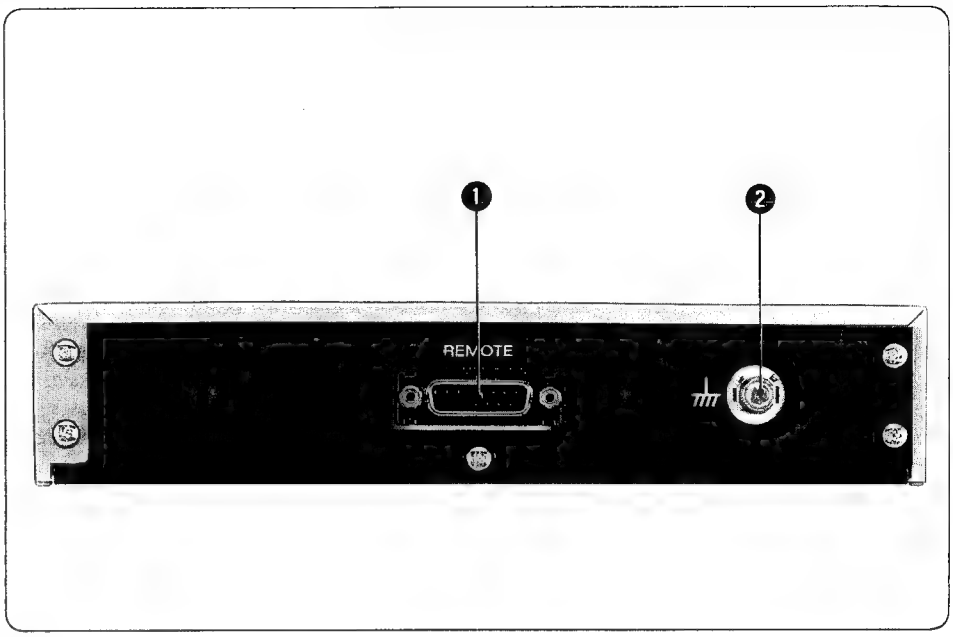
❺ Y/C-Verzögerungsregler (Y/C DELAY) und Festwertschalter (PRESET)
Dieser Regler und dieser Schalter arbeiten nicht, wenn die Einheit im Videorecorder BVU-950P verwendet wird.

❻ Synchronphasenregler (SYNC PHASE)

❼ Hilfsträgerphasenregler (SC PHASE)
Diese Regler kompensieren die im Verbindungskabel zwischen Referenzsignalgerät und Videorecorder entstehende Verzögerung zwischen Synchron- und Hilfsträgersignal.
Der Einstellbereich des SYNC PHASE-Reglers reicht von -1 µs bis $+3$ µs.
Der SC PHASE-Regler besitzt einen Einstellbereich von 360°, so daß jede beliebige Hilfsträgerphase im Wiedergabesignal an die Phase des Referenzsignals angepaßt werden kann. Die Einstellung des SC PHASE-Reglers hat keinen Einfluß auf die Synchronsignalphase.
Mit diesen Reglern kann die Synchronsignalphase und die Hilfsträgerphase des TBC-Ausgangs ggf. an die Referenzsignalphase des Referenzsignalgeräts angepaßt werden. Hierzu wird das TBC-Ausgangssignal zum Referenzsignalgerät wie unten gezeigt zurückgeleitet.



1-3-2. Rückseite der BVR-50P



1 **Fernsteuerbuchse (REMOTE)**
Diese Buchse wird über das mitgelieferte Fernsteuerkabel mit der TBC REMOTE-Buchse des Videorecorders BVU-950P verbunden.

2 **Erdungsanschluß**
Gehäusemasse

1-4. Technische Daten

Leistungsaufnahme	20 W
Abmessungen (B/H/T)	Leiterplatte: 420×205×25 mm Steuereinheit: 212×43,6×110 mm
Gewicht	Leiterplatte: 950 g Steuereinheit: 820 g
Betriebstemperatur	+5°C bis +40°C
Lagertemperatur	−20°C bis +60°C
Video	
Bandbreite	0 — 5,0 MHz ±0,5 dB 6 MHz −3 dB
S/R	55 dB
DG	unter 2 %
DP	unter 2°
K-Faktor (2T-Impuls)	unter 1 %
Fenster	31 Hss
Restfehler	Farbe: kleiner als ±2,5 ns Schwarzweiß: kleiner als ±15 ns
Y/C-Verzögerung	unter 25 ns
Prozessor-Einstellbereich (von BVR-50P gesteuert)	
OUTPUT VIDEO-Pegel	±3 dB
CHROMA-Pegel	±3 dB
BLACK-Pegel	0 — 0,1 V
BURST/CHROMA	±15°
SYSTEM SYNC PHASE	−1 bis +3 μs
SYSTEM SC PHASE	360°
Mitgeliefertes Zubehör	Fernsteuerkabel (1) Bedienungs- und Wartungsanleitung (1)

Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

SECTION 2
INSTALLATION

2-1. SWITCH SETTING

(1) S403: SYNC 8H-delay Switch

When the BVU-950P is in the EE/REC/EDIT mode, the output signal from the BVU-950P bypasses the TBC circuit, but the TBC circuit can set forcibly to ON in these modes.

When the TBC circuit in the BVU-950P is set to ON in the EE/REC/EDIT mode, the TBC output signal delays by 8H against the VTR input signal.

Therefore, the sync signal that is replaced by the TBC output had better delay by 8H.

When S403 is set to the 8H position, the sync signal that is replaced by the TBC output is delayed by 8H in the EE/REC/EDIT mode.

When S403 is set to the 0H position, the sync signal is not delayed. Therefore, the sync signal is the same phase as the reference signal.

In this case, the TBC output video signal is delayed by 8H, therefore the video signal is shifted to the vertical direction.

When the unit is shipped, this switch is set to the 8H position.

(2) S501, S502, S503: Blanking Line Select Switches

(S501:Bit 1-Bit 8 / S502:Bit 1-Bit 8 / S503:Bit 1)

S501, S501, S503: The blanking of any line between 7 (320) line through 23 (335) of the TBC output signal can be turned ON/OFF.

Dip Switch	line
S501-Bit 1	7 (320)
S501-Bit 2	8 (321)
S501-Bit 3	9 (322)
S501-Bit 4	10 (323)
S501-Bit 5	11 (324)
S501-Bit 6	12 (325)
S501-Bit 7	13 (326)
S501-Bit 8	14 (327)
S502-Bit 1	15 (328)
S502-Bit 2	16 (329)
S502-Bit 3	17 (330)
S502-Bit 4	18 (331)
S502-Bit 5	19 (332)
S502-Bit 6	20 (333)
S502-Bit 7	21 (334)
S502-Bit 8	22 (335)
S503-Bit 1	23 (only half line)

Turn ON the switch that corresponds to blanking the line.

When the unit is shipped, all these switches are set to the ON position.

(3) **S601: Beat Canceller ON/OFF Switch**

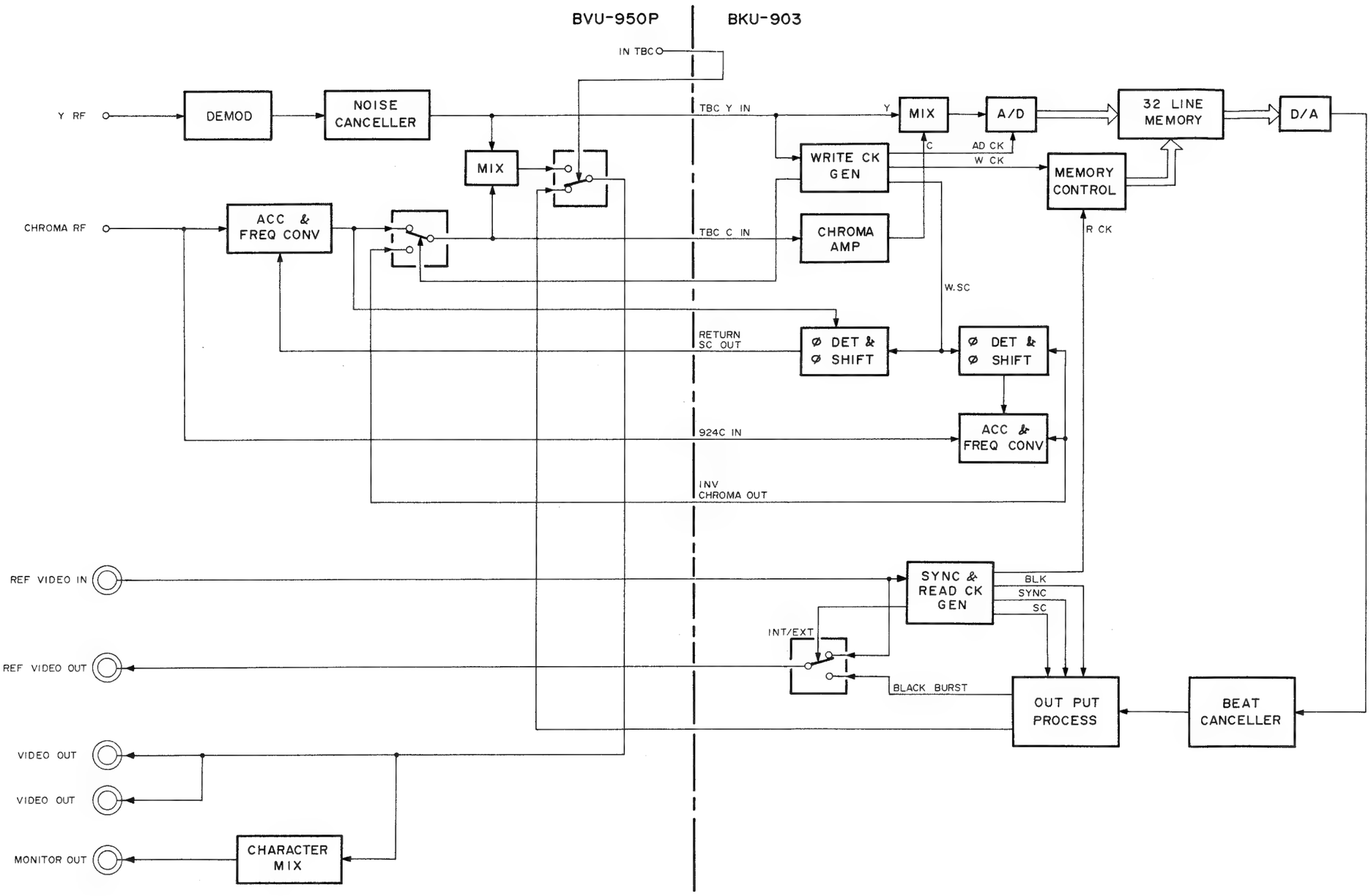
Turn ON the Beat Canceller ON/OFF switch, the secondary beat of chroma down-converted carrier remained into the VTR output can be cancelled.
When the unit is shipped, this switch is set to the ON position.

(4) **S701: Black Level Adjusting Switch**

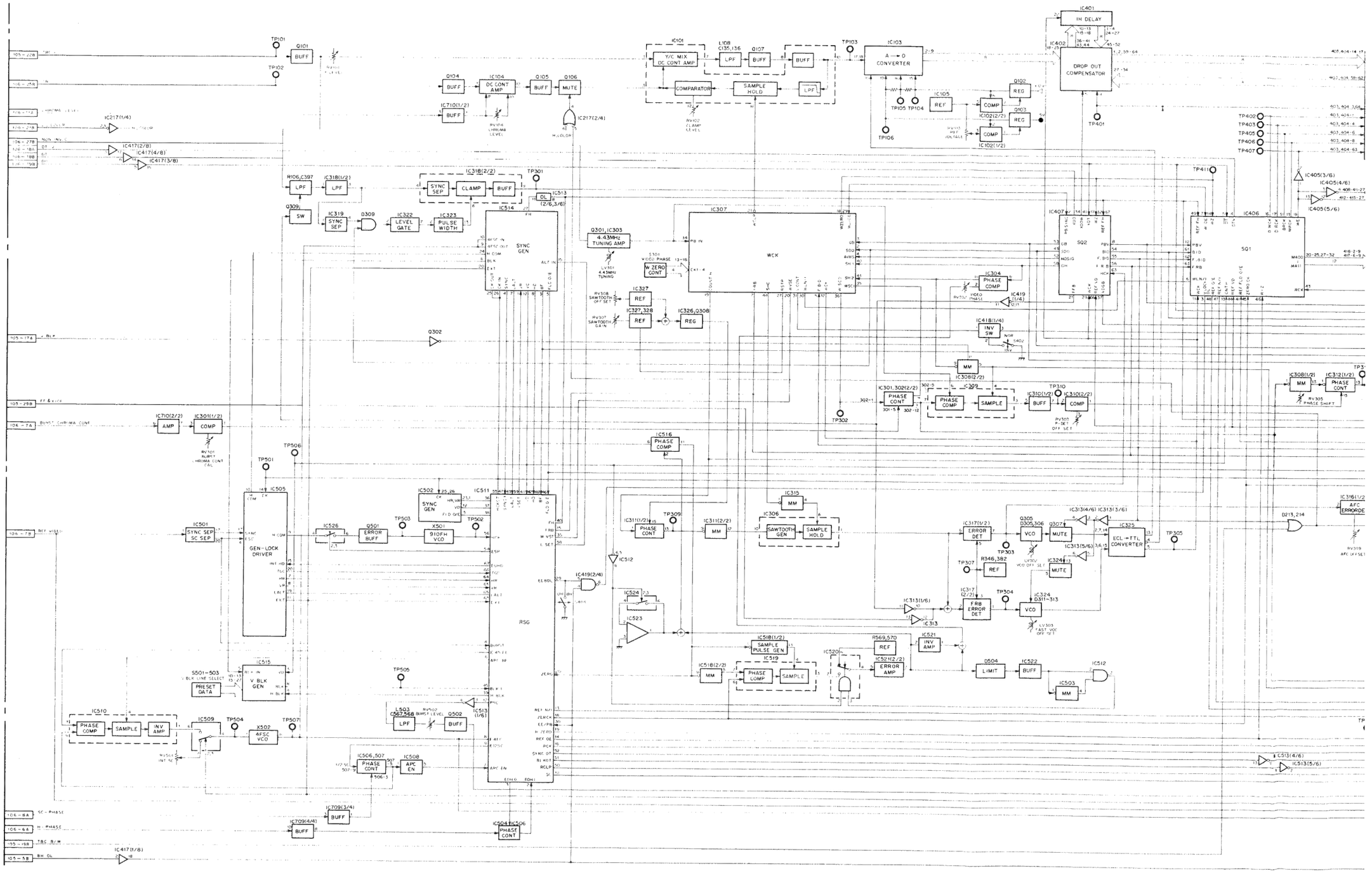
The black level of the TBC output signal can be adjusted using the BVR-50P's BLACK LEVEL control within the range from 0 to 0.11V.
When this switch is set to OFF (-0.1 position), the adjustment range can be extended up to -0.11V (the opposite position to 0).
When the unit is shipped, this switch is set to the 0 position.

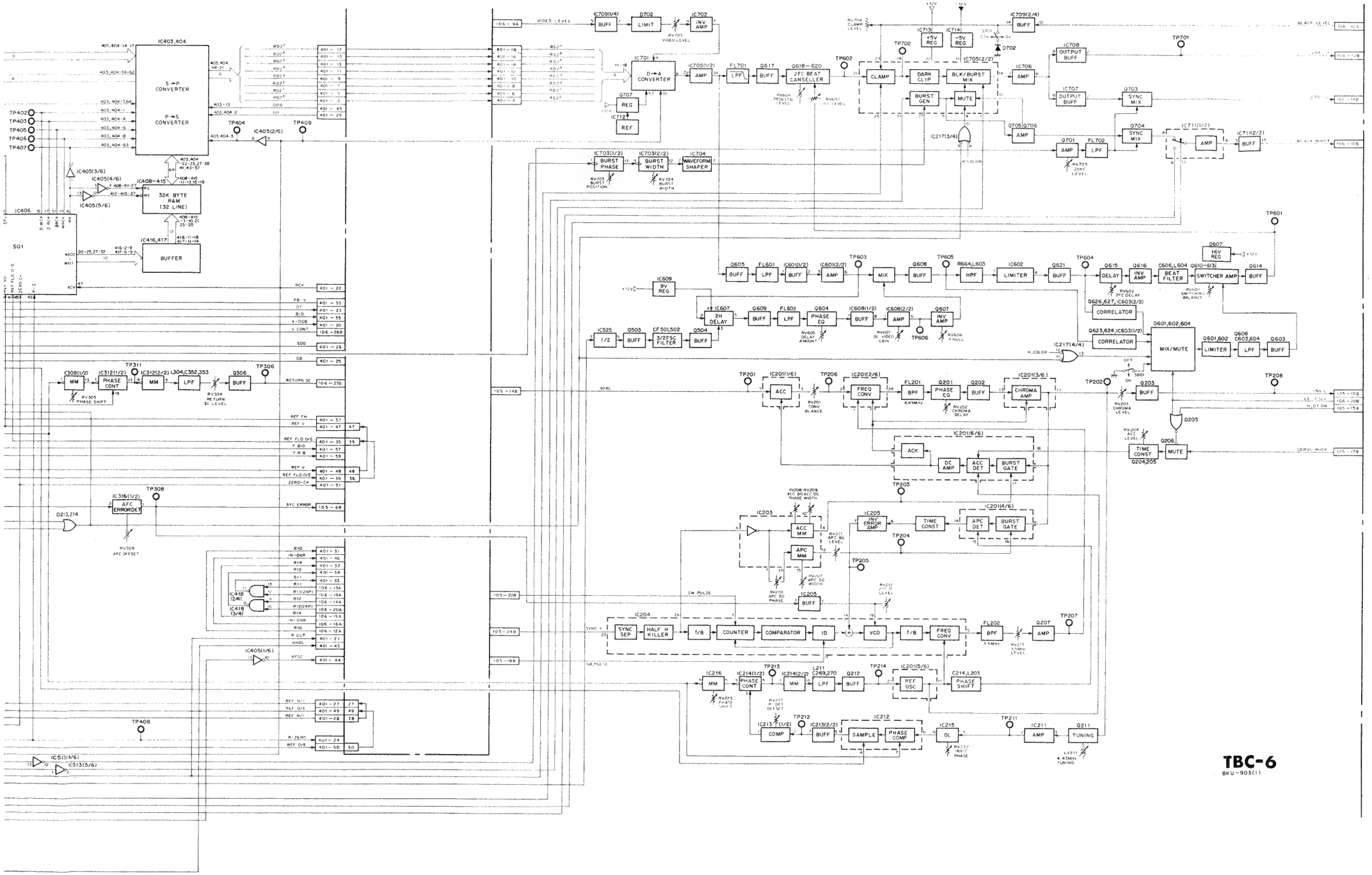
SECTION 4
BLOCK DIAGRAMS

SIGNAL FLOW CHART



TIME BASE CORRECTOR





TBC-6
BKU-903(1)

SECTION 5
SEMICONDUCTOR ELECTRODES

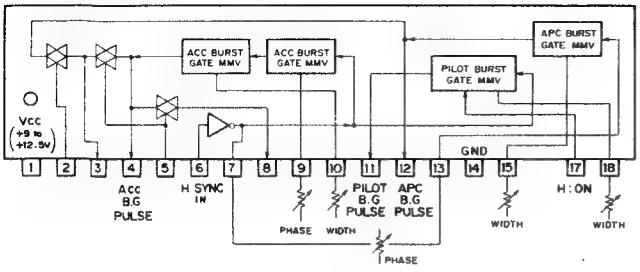
ここに記載されているIC、トランジスタ、ダイオードは、それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。(互換性のない型名が併記されている事もあります。)部品の交換をする時は、SPARE PARTSの章を参照して下さい。

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

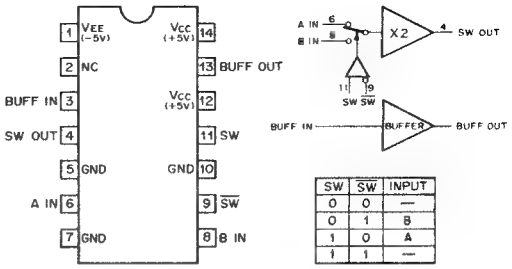
等価回路はICメーカーのData Bookに従いました。

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

BX1264 (SONY)
BX1264L (ROHM)
ACC/APC BURST GATE PULSE GENERATOR
— PRINTED SIDE VIEW —



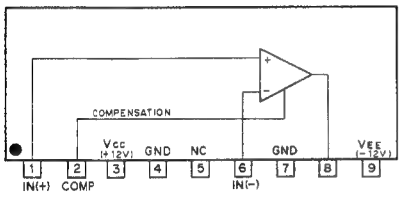
CX20158 (SONY)
VIDEO SWITCHER AND BUFFER
— TOP VIEW —



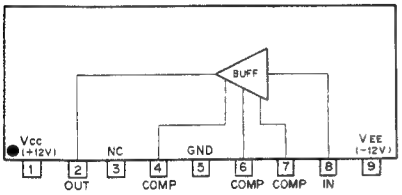
SW	SW	INPUT
0	0	—
0	1	B
1	0	A
1	1	—

0 ; LOW LEVEL
1 ; HIGH LEVEL
— ; INDEFINITE

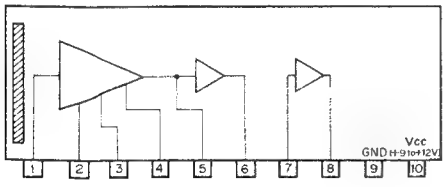
BX365AL (ROHM)
VIDEO AMPLIFIER
— SIDE VIEW —



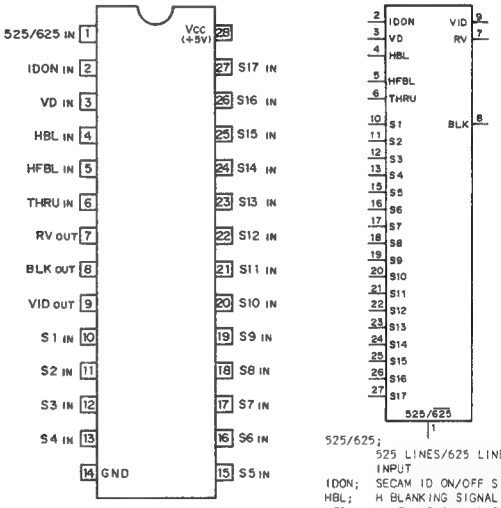
BX366AL (ROHM)
VIDEO BUFFER
— SIDE VIEW —



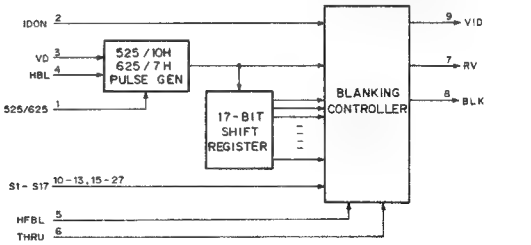
BX389L (ROHM)
VIDEO AMPLIFIER
— PRINTED SIDE —



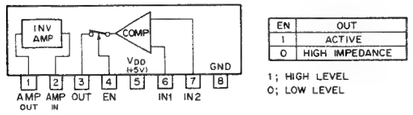
CX20162 (SONY)
BIPOLAR/TTL VERTICAL BLANKING WIDTH CONTROLLER
— TOP VIEW —



525/625; 525 LINES/625 LINES SETTING INPUT
IDON; SECAM ID ON/OFF SIGNAL INPUT
HBL; H BLANKING SIGNAL INPUT
HFBL; HALF H BLANKING SIGNAL INPUT
THRU; FORCIBLE BLANKING SIGNAL INPUT
S1-S17; BLANKING LINE SELECTION SWITCH INPUTS
RV; 14TH LINE TIMING SIGNAL OUTPUT
BLK; BLANKING SIGNAL OUTPUT
VID; SECAM ID TIMING SIGNAL OUTPUT



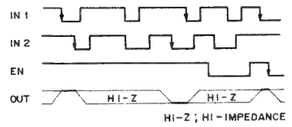
CX23065 (SONY)
N-MOS PHASE COMPARATOR WITH INVERSION AMPLIFIER
— PRINTED SIDE VIEW —



EN	OUT
1	ACTIVE
0	HIGH IMPEDANCE

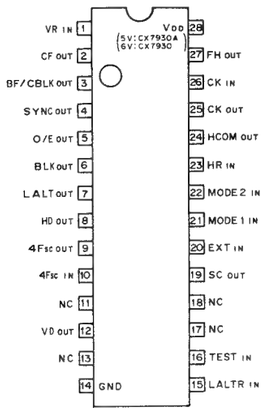
1 ; HIGH LEVEL
0 ; LOW LEVEL

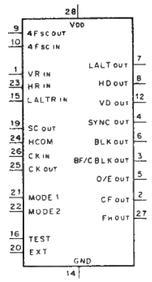
TIMMING CHART



HI-Z ; HI-IMPEDANCE

CX7930A (SONY) FLAT PACKAGE
C-MOS SYNC GENERATOR (NTSC, PAL-M, PAL, SECAM)
— TOP VIEW —





O/E :ODD/EVEN FIELD
CF :COLOR FRAME PULSE
HCOM :H COMPARATOR

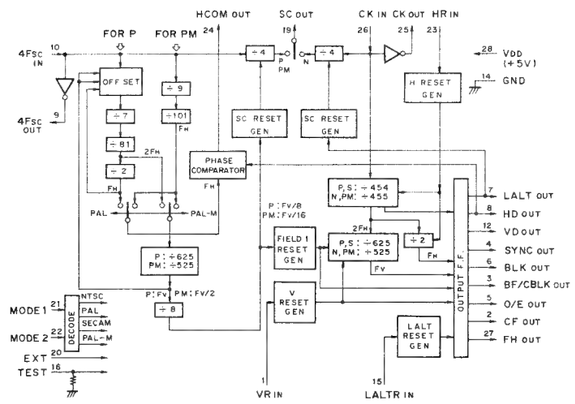
SYSTEM	4Fsc	CLOCK
NTSC	910 FH	910FH
PAL	1135FH+2Fv	908FH
PALM	909FH	910FH
SECAM	———	908FH

INPUTS		SYSTEM
MODE 1	MODE 2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

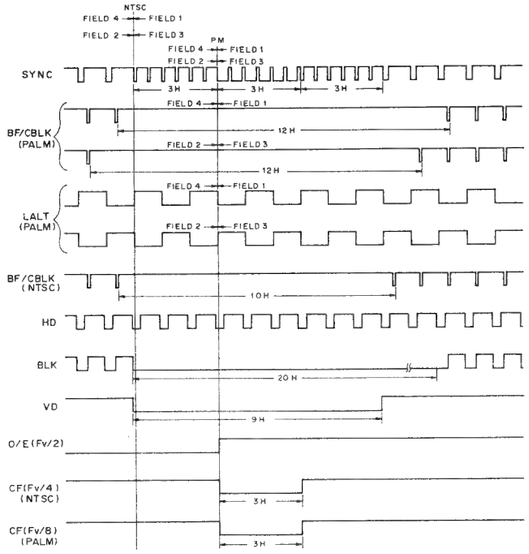
0 ; LOW LEVEL (GND)
1 ; HIGH LEVEL (VDD)

INPUTS		FUNCTION
EXT	TEST	
0	0	INTERNAL
0	1	INVALID
1	0	EXT
1	1	TEST

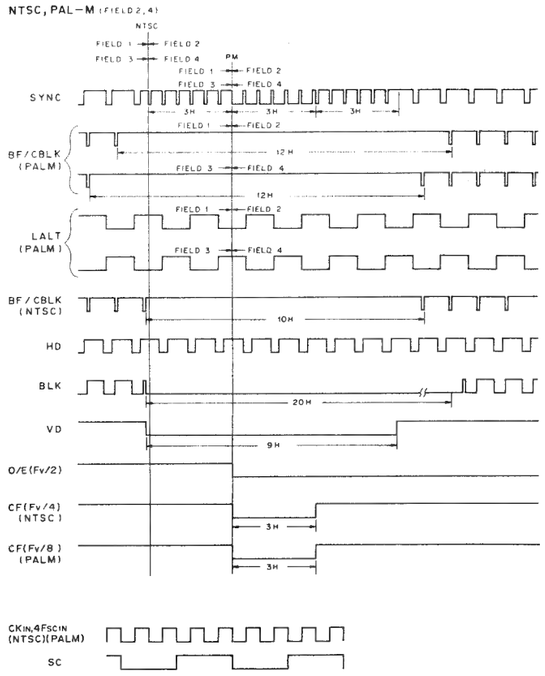
TEST "0" OPEN (INTERNALLY PULLED DOWN)



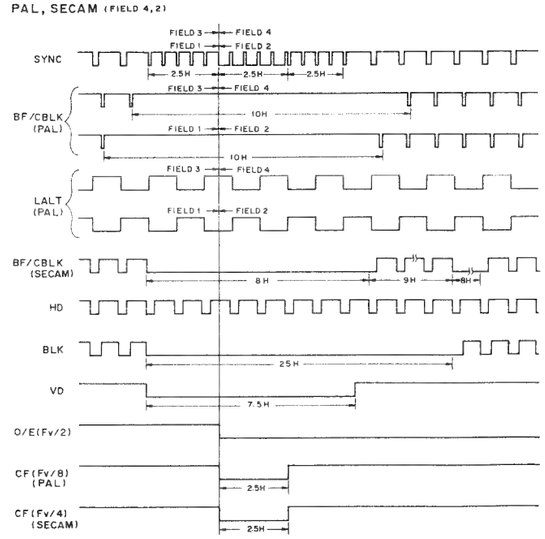
NTSC, PAL-M (FIELD 1,3)



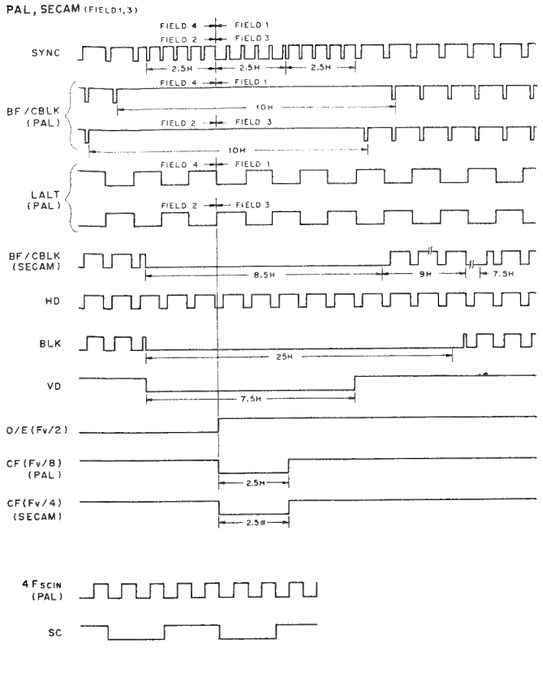
NTSC, PAL-M (FIELD 2,4)



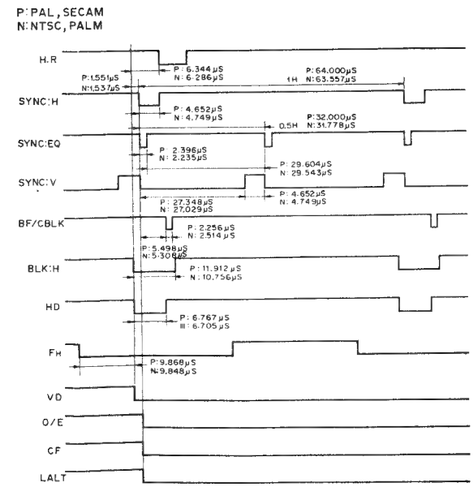
PAL, SECAM (FIELD 4,2)



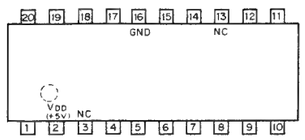
PAL, SECAM (FIELD1,3)



P:PAL, SECAM
N:NTSC, PALM



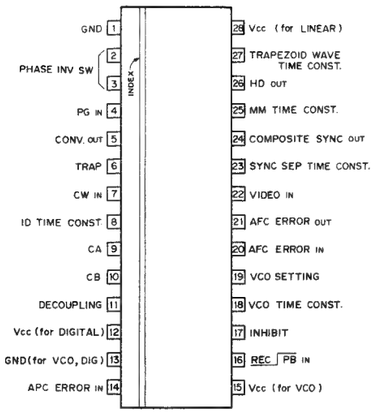
CX7998 (SONY) FLAT PACKAGE
C-MOS GENLOCK DRIVER FOR CX773A
— TOP VIEW —



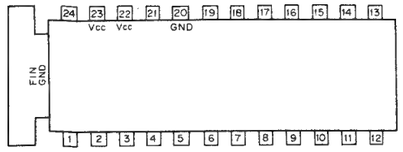
INPUTS		EXT LOCK MODE	
MODE 1	MODE 2		
0	0	M 1	PAL : VBS
1	0	M 2	PAL-M : VBS
0	1	M 3	PAL : VS/SC/LALT
			SECAM : VS/SC/LALT
1	1	M 4	NTSC : VBS
			NTSC : VS/SC
			PAL-M : VS/SC/LALT

0 ; LOW LEVEL
1 ; HIGH LEVEL

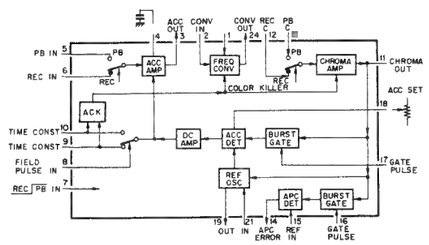
CX859 (SONY)
— TOP VIEW —

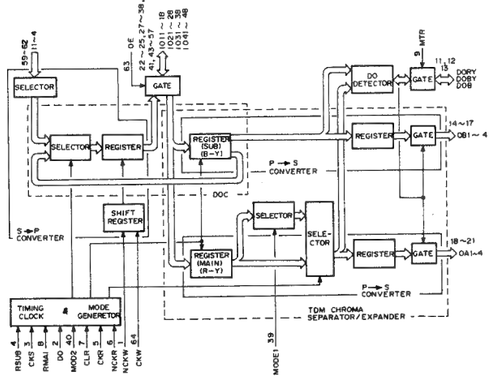


CX872 (SONY)
— TOP VIEW —



PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME	PIN NO.	IN/OUT	PIN NAME
1	I	NCKW	17	O	OB4	33	I/O	I036	49	I/O	I021
2	I	DO	18	O	OA1	34	I/O	I035	50	I/O	I018
3	I	CKS	19	O	OA2	35	I/O	I034	51	I/O	I017
4	I	RSUB	20	O	OA3	36	I/O	I033	52	I/O	I016
5	I	CKR	21	O	OA4	37	I/O	I032	53	I/O	I015
6	I	NCKR	22	I/O	I048	38	I/O	I031	54	I/O	I014
7	I	CLR	23	I/O	I047	39	I	MOD1	55	I/O	I013
8	I	RMAI	24	I/O	I046	40	I	MOD2	56	I/O	I012
9	I	MTR	25	I/O	I045	41	I/O	I028	57	I/O	I011
10	—	GND	26	—	VDD	42	—	GND	58	—	VDD
11	I/O	DORY	27	I/O	I044	43	I/O	I027	59	I	I1
12	I/O	DOBY	28	I/O	I043	44	I/O	I026	60	I	I2
13	I/O	DOB	29	I/O	I042	45	I/O	I025	61	I	I3
14	O	OB1	30	I/O	I041	46	I/O	I024	62	I	I4
15	O	OB2	31	I/O	I038	47	I/O	I023	63	I	OE
16	O	OB3	32	I/O	I037	48	I/O	I022	64	I	CKW





DECODER TRUTH TABLE

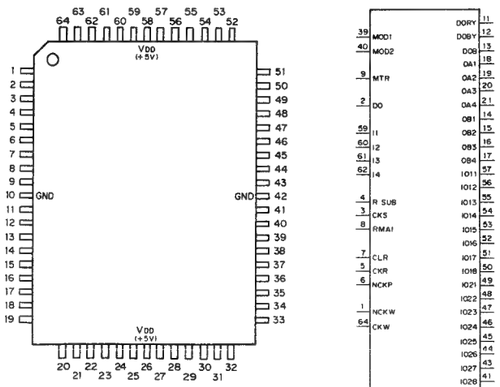
CA \ CB	LOW	OPEN	HIGH
LOW	C1	C7	—
OPEN	C4	C5	C6
HIGH	—	* C2 C3	C8

* PG : L --- C2
PG : H --- C3

AFC/APC PRESET DATA

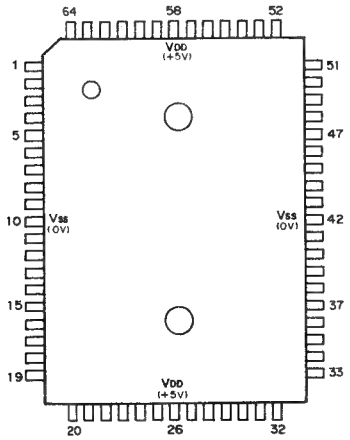
	AFC COUNT DOWN	APC ID COUNT	
		UPPER LIM.	LOWER LIM.
C1	f/473	105	95
C2	f/351	129	119
C3	f/353	137	127
C4	f/351	118	104
C5	f/351	131	117
C6	f/351	144	130
C7	f/350	136	104
C8	——	125	115

CXD1020Q (SONY)
C-MOS SERIAL-TO/FROM-PARALLEL CONVERTER
— TOP VIEW —

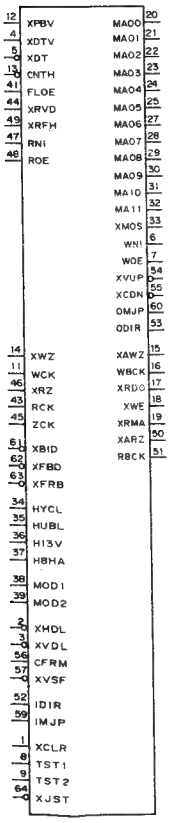


CKR ; MAIN SIGNAL P/S CONV. CLOCK INPUT
CKS ; SUB SIGNAL P/S CONV. CLOCK INPUT
CKW ; S/P CONV. CLOCK INPUT
CLR ; START LINE ID SIGNAL INPUT
DO ; INPUT DATA REPLACEMENT CONTROL INPUT
DOB ; BECOME LOW LEVEL WHEN DORY OR DOBY IS LOW.
DORY ; BECOME LOW LEVEL WHEN R-Y OR MAIN ARE ALL LOW.
DOBY ; BECOME LOW LEVEL WHEN B-Y OR MAIN ARE ALL LOW.
I1 - I4 ; SERIAL DATA INPUTS
I011 - I048 ; PARALLEL DATA INPUTS/OUTPUTS
MOD1,2 ; MODE CONTROL INPUTS
MTR ; MASTER/SLAVE CONTROL INPUT
NCKR ; PHASE CONTROL CLOCK(FOR OA1-OA4)INPUT
NCKW ; DIVIDING CLOCK INPUT
OA1 - OA4 ; SERIAL DATA/MAIN/R-Y OUTPUTS
OB1 - OB4 ; SERIAL DATA/MAIN/B-Y OUTPUTS
OE ; READ/WRITE CONTROL INPUT
RMAI ; MAIN PARALLEL DATA LATCH CONTROL INPUT

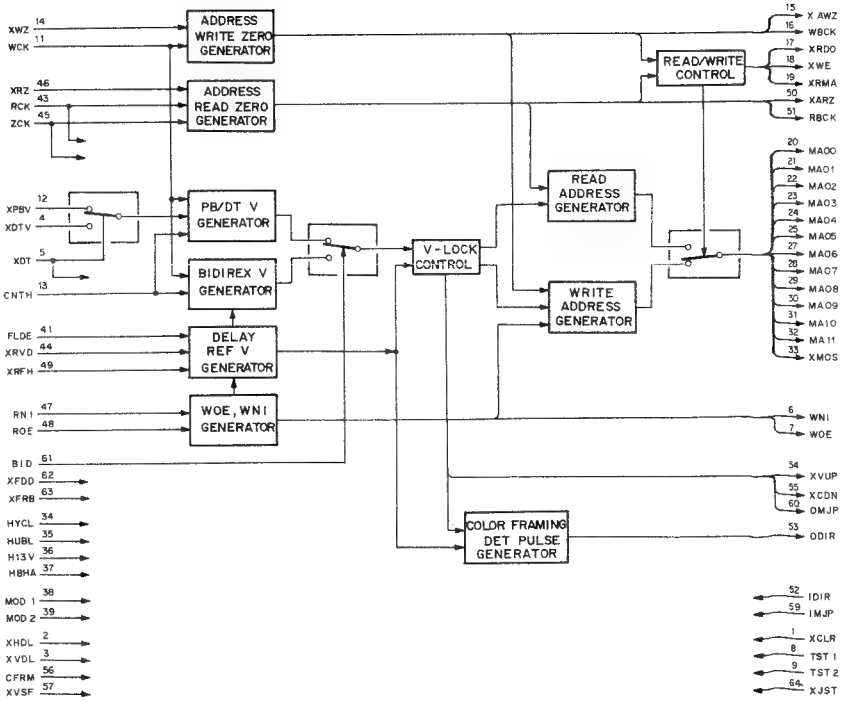
CXD1022CQ (SONY) FLAT PACKAGE
C-MOS TBC
— TOP VIEW —



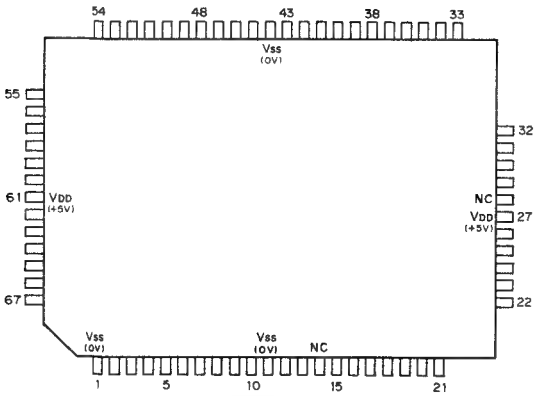
PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL
1	O		XCLR	17		O	XRDO	33		O	XMOS	49	O		XRFH
2	O		XHDL	18		O	XWE	34	O		HYCL	50		O	XARE
3	O		XVDL	19		O	XRMA	35	O		HUBL	51		O	RBCK
4	O		XDTV	20		O	MA00	36	O		H13V	52	O		IDIR
5	O		XDT	21		O	MA01	37	O		H8HA	53		O	ODIR
6		O	WNI	22		O	MA02	38	O		MOD1	54		O	XVUP
7		O	WOE	23		O	MA03	39	O		MOD2	55		O	XCDN
8	O		TST1	24		O	MA04	40		O	HEE	56	O		CFRM
9	O		TST2	25		O	MA05	41	O		FLOE	57	O		XVSF
10			VSS	26			VDD	42			VSS	58			VDD
11	O			27		O	MA06	43	O			59	O		IMJP
12	O		XPBV	28		O	MA07	44	O		XRVD	60		O	CMJP
13	O		CNTH	29		O	MA08	45	O			61	O		XBID
14	O			30		O	MA09	46	O			62	O		XFBD
15	O		XAWZ	31		O	MA10	47	O			63	O		XFRB
16		O	WBCK	32		O	MA11	48	O			64	O		XJST



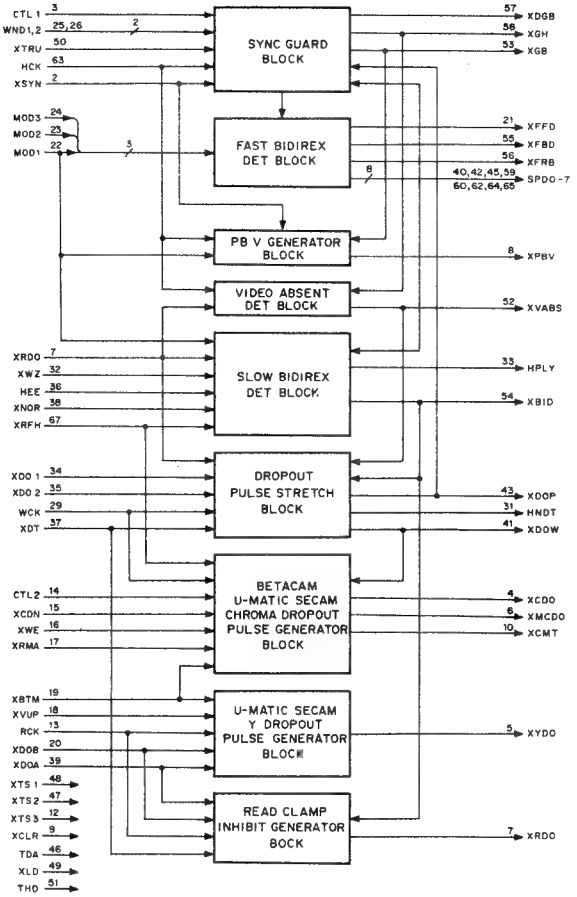
CFRM; COLOR FRAMING IN
CNTH; COUNTER-H IN
FLOE; REF FIELD O/E IN
H13V; H; 13V-LOCK/
L; 15V-LOCK IN
H8HA; H; 8H ADVANCE/
L; 16H ADVANCE IN
HEE; H; EE OUT
HUBL; H; U MATIC/
L; BETACAM IN
HYCL; H; Y-ch/L; C-ch IN
IDIR; H; DIRECT/
L; PROCESS IN
IMJP*; L; V-LOCK 2H-DELAY IN
MA00-11; MEMORY ADDRESS 2^0~2^11, OUT
MOD1, 2**; MODE SELECT IN
ODIR*; COLOR FRAME ID DETECT PULSE OUT
OMJP*; L; MEMORY JUMP OUT
RBCK; READ 8 CLOCK OUT
RCK; READ CLOCK IN
RNI; REF LINE N/I IN
ROE; REF LINE O/E
TST1, 2; TEST 1, 2 IN
WBCK; WRITE 8 CLOCK OUT
WCK; WRITE CLOCK IN
WNI; WRITE LINE N/I IN
WOE; WRITE LINE O/E
XARZ; ADDRESS READ ZERO OUT
XAWZ; ADDRESS WRITE ZERO OUT
XBID; L; BIDIREX IN
XCDN; L; C-ch V-LOCK DOWN OUT
XCLR; CLEAR IN
XDT; L; DT IN
XDTV; DT V-SYNC
XFBD; L; FAST BIDIREX IN
XFRB; L; FAST REVERSE BIDIREX IN
XHDL; L; H DELAY IN
XJST; L; COMPOSITE IN
XMOS; MEMORY ADDRESS 2^11 OUT
XPBV; PB V-SYNC
XRDO; READ DO DATA OUT
XRFH; REF FH IN
XRMA; READ MAIN DATA OUT
XRVD; REF VD IN
XRZ; READ ZERO IN
XVDL; L; VIDEO DELAY IN
XVSF; L; V-LOCK SHIFT IN
XVUP; L; V-LOCK UP OUT
XWE; WRITE ENABLE OUT
XWZ; WRITE ZERO IN
ZCK; ZERO CLOCK IN

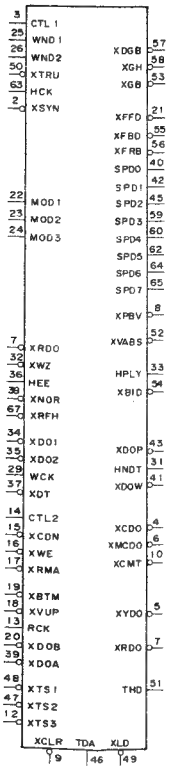


CXD1023AQ (SONY) FLAT PACKAGE
C-MOS TBC
— TOP VIEW —



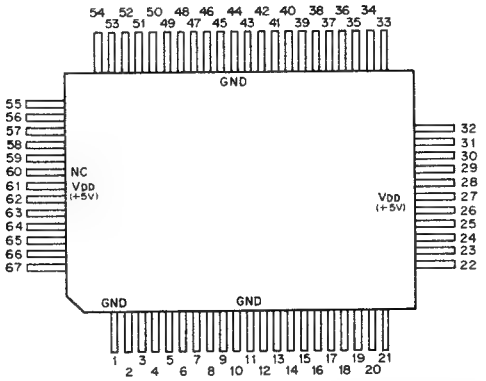
PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL
1			Vss	21		○	XFFD	41	○	○	XDOW	61			VDD
2	○		XSYN	22	○		MOD1	42		○	SPD6	62		○	SPD2
3	○		CTL1	23	○		MOD2	43	○	○	XDOP	63	○		HCK
4		○	XCDO	24	○		MOD3	44			Vss	64		○	SPD1
5		○	XYDO	25	○		WND1	45		○	SPD5	65		○	SPD0
6	○	○	XMCDO	26	○		WND2	46	○		TDA	66	○		XRVD
7		○	XRDO	27			VDD	47	○		XTS1	67	○		XRFH
8		○	XPBV	28	—	—	—	48	○		XTS2				
9	○		XCLR	29	○		WCK	49	○		XLD				
10		○	XCMT	30	—	—	—	50	○		XTRU				
11			Vss	31		○	HNDT	51		○	THD				
12	○		XTS3	32	○		XWZ	52	○	○	XVABS				
13	○		RCK	33		○	HPLY	53	○	○	XGB				
14	○		CTL2	34	○		XDO1	54	○	○	XBID				
15	○		XCDN	35	○		XDO2	55	○	○	XFBD				
16	○		XWE	36	○		HEE	56	○	○	XFRB				
17	○		XRMA	37	○		XDT	57		○	XDGB				
18	○		XVUP	38	○		XNOR	58	○	○	XGH				
19	○		XBTM	39	○		XDOA	59		○	SPD4				
20	○		XDOB	40		○	SPD7	60		○	SPD3				



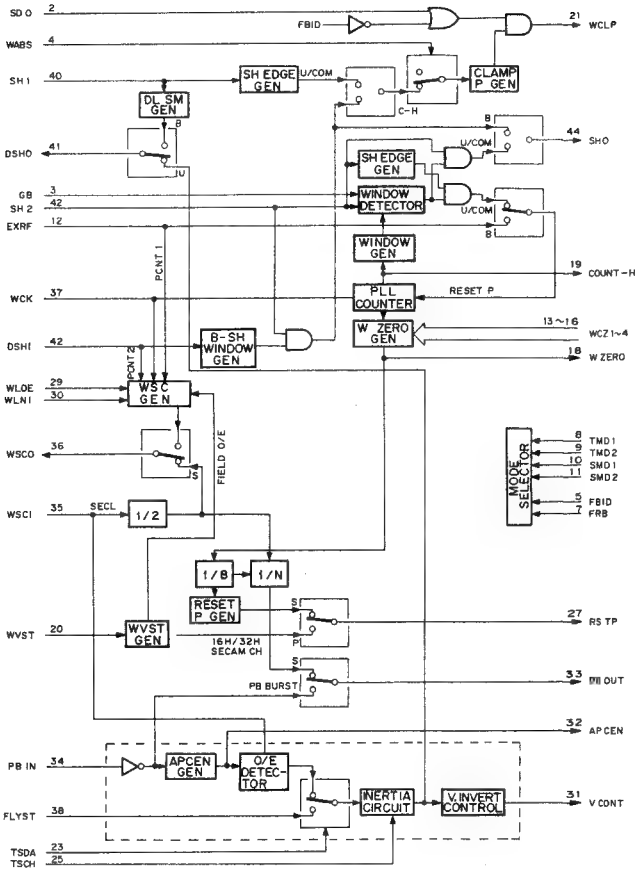


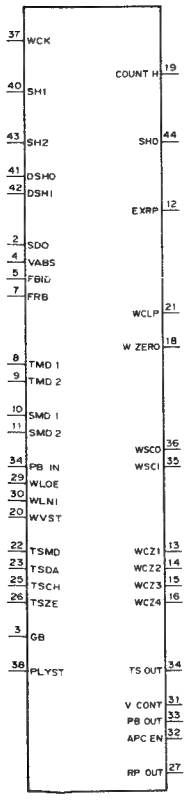
CTL1,2; CTL1,2 IN
HCK; 910 CLOCK IN
HEE; EE IN
HNDT; NORMAL PLAY/DT PLAY OUT
HPLY; PLAY OUT
MOD1; MODE 1 IN (525/625)
MOD2; MODE 2 IN (U-MATIC/BETACAM)
MOD3; MODE 3 IN (/U-MATIC +BETACAM)
RCK; READ CLOCK IN
SPD0; PLAYBACK SPEED 20 OUT
SPD7; PLAYBACK SPEED 27 OUT
TDA; TEST DATA IN
THD; TEST HD OUT
WCK; WRITE CLOCK IN
WND1,2; SYNC GUARD WINDOW 1,2 IN
XBID; BIDIREX IN/OUT
XBTH; BOTTOM LINE SIGNAL IN (SECAM)
XCDN; DROPOUT CHROMA 1H SHIFT DOWN IN (SECAM)
XCDO; DROPOUT CHROMA PULSE OUT (SECAM)
XCLR; CLEAR IN
XCMT; CHROMA MUTE OUT (BETACAM ENCODER)
XDGB; DROPOUT PULSE OUT (BETACAM CHROMA)
XDO1,2; DROPOUT PULSE 1,2 IN
XDOA,B; READ SIDE DROPOUT PULSE A,B IN
XDOP; DROPOUT PULSE STRETCH IN/OUT
XDOW; DROPOUT PULSE STRETCH IN/OUT (NOR/DT PLAYBACK ONLY)
XDT; DT IN
XFBD; FAST BIDIREX IN/OUT
XFFD; F-FORWARD OUT
XFRB; FAST REVERSE BIDIREX IN/OUT
XGB; GUARD BAND IN/OUT
XGH; GUARD H IN/OUT
XLD; TEST DATA LOAD IN
XMCDO; DROPOUT CHROMA MEMORY DATA IN/OUT (SECAM)
XNOR; NORMAL FWD IN
XPBV; PB VIDEO OUT
XRDO; READ CLAMP INHIBIT SIGNAL OUT
XRFH; REF FH IN
XRMA; DROPOUT CHROMA OF MEMORY SIGNAL IN (SECAM)
XRVD; REF VD IN
XSYN; PB SYNC IN
XTRU; SYNC GUARD THROUGH MODE IN
XTS1-3; TEST 1-3 IN
XVABS; VIDEO ABSENT IN/OUT
XVUP; V LOCK UP
XWE; WRITE IN
XWZ; WRITE ZERO IN
XYDO; DROPOUT Y PULSE OUT (SECAM)

CXD1024Q (SONY)
C-MOS TIMING PULSE GENERATOR FOR TBC
— TOP VIEW —



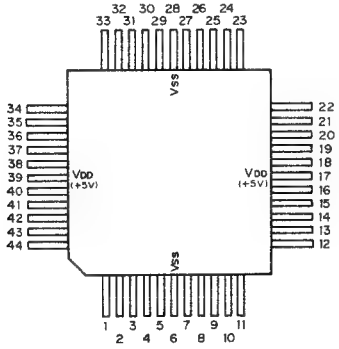
PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL	PIN NO.	IN/OUT	SYMBOL
1	—	GND	18	O	ZEROK	35	O	WVCRZ	52	O	SYNOT
2	I	EOH1	19	O	RZERO	36	O	ADVVS	53	O	BFOUT
3	O	EOH0	20	I	ZEROG	37	I	ADVVD	54	O	ESPLD
4	I	BURST	21	O	E14CK	38	I	ADVFL	55	O	HCKOT
5	O	E45FE	22	I	MODE1	39	O	HBLK	56	I	HCKIN
6	O	APCBF	23	I	MODE2	40	I	FH	57	I	NOCON
7	I	APCEN	24	I	UB	41	I	VD	58	O	LALST
8	I	E4FS1	25	I	CNR	42	I	HD	59	O	V SET
9	O	E12SC	26	I	E816	43	I	ALT	60		
10	O	SC	27	—	VDD	44	—	VSS	61	—	VDD
11	—	GND	28	I	TEST	45	I	BLK1	62	I	EXT
12	O	PSC	29	I	EE8DL	46	I	FLDOE	63	I	VR
13	O	REFN1	30	I	EEPB	47	I	SYNC1	64	I	HR
14	O	REFOE	31	I	SV2	48	I	BFIN	65	I	LALTR
15	I	FRB	32	I	SV1	49	I	DOP	66	I	TGC
16	O	ROK	33	I	REC	50	I	RCLP	67	O	EOHD
17	O	HRCR	34	I	AB	51	I	BLKOT			





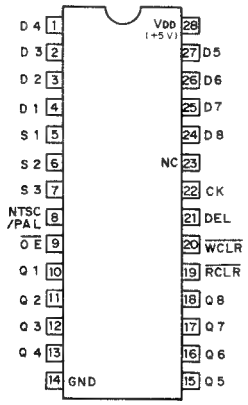
APC EN ; APC ENABLE
COUNT H; COUNTER H
DSHI ; DELAYED SH IN
DSHO ; DELAYED SH OUT
EXRP ; EXT RESET PULSE
F BID ; FAST BIDIREX
FR B ; FAST REVERSE BIDIREX
GH ; GATED H
PB IN ; PB BURST IN
PB OUT ; PB BURST OUT
PLYST ; PLAY STATUS
RP OUT ; RESET PULSE OUT
SDO ; STRETCHED DOROP OUT
SHO ; SELECTED H OUT
SH1 ; SELECTED H1
SH2 ; SELECTED H2
SMD1 ; S MODE 1
SMD2 ; S MODE 2
TMD1 ; T MODE 1
TMD2 ; T MODE 2
TSCH ; TEST COUNTER H
TSDA ; TEST DATA IN
TSMD ; TEST MODE
TSOUT ; TEST OUT
TSZE ; TEST W ZERO
VABS ; VIDEO ABSENT
V CONT ; V AXIS CONTROL
WCK ; WRITE CLOCK
WCLP ; WRITE CLAMP PULSE
WCZ1 ; WRITE ZERO CONTROL 1
WCZ2 ; WRITE ZERO CONTROL 2
WCZ3 ; WRITE ZERO CONTROL 3
WCZ4 ; WRITE ZERO CONTROL 4
WLNI ; WRITE LINE N/I
WLOE ; WRITE LINE O/E
WSCI ; WRITE SC IN
WSCO ; WRITE SC OUT
WVST ; WRITE V SET
W ZERO ; WRITE ZERO

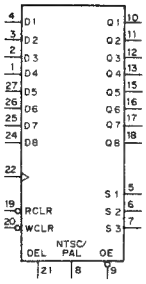
CXD1045Q (SONY)
C-MOS PLL COUNTER FOR TBC (WRITE CLOCK)
— TOP VIEW —

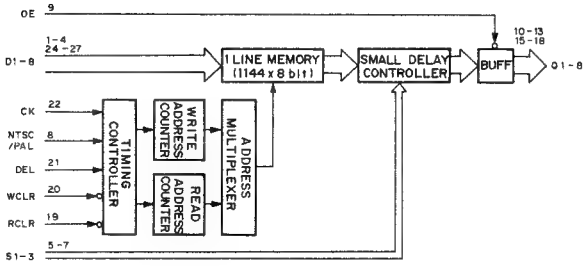


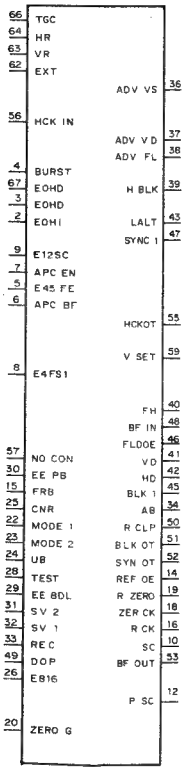
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	Vss2	12	I	EXRP	23	I	TSDA	34	I	PBIN
2	I	SDO	13	I	WCZ1	24	I	TSOUT	35	I	WSC1
3	I	GB	14	I	WCZ2	25	I	TSCH	36	O	WSCO
4	I	VABS	15	I	WCZ3	26	I	TSZE	37	I	WCK
5	I	FBID	16	I	WCZ4	27	O	RPOUT	38	I	PLYST
6	I	Vss	17	—	VDD	28	—	Vss	39	—	VDD
7	I	FRB	18	O	WZERO	29	I	WLOE	40	I	SH1
8	I	TMD 1	19	O	COUNT H	30	I	WLNI	41	O	DSHO
9	I	TMD 2	20	I	WVST	31	O	V CONT	42	I	DSHI
10	I	SMD 1	21	O	WCLP	32	O	APC EN	43	I	SH2
11	I	SMD 2	22	I	TSMD	33	O	PBOUT	44	O	SHO

CXK1202S (SONY)
C-MOS DIGITAL DELAY LINE
— TOP VIEW —



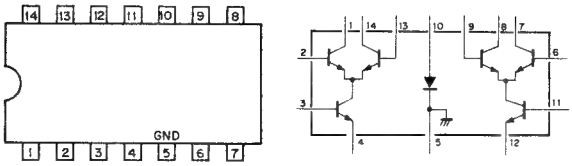




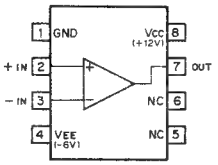



```
AB      ; ADVANCE SYNC V PHASE CONTROL
ADVFL   ; ADVANCE SYNC FIELD O/E OUT
ADVVD   ; ADVANCE SYNC VD OUT
ADVVS   ; ADVANCE SYNC V SET PULSE OUT
APCBF   ; APC BURST FLAG
APCEN   ; APC ENABLE
BF IN   ; BF IN
BF OUT  ; BF OUT
BLKI    ; BLANKING IN
BLKOT   ; BLANKING OUT
BURST   ; BURST
DOP     ; CLAMP PULSE INHIBIT
E 12SC  ; 1/2 SC OUT
E 14SC  ; 1/4 SC OUT
E4FSI   ; 4 FSC IN
E45FE   ; 4/5 FSC OUT
E 8/6   ; 16/32
EE8DL   ; 8H DELAY
EEPB    ; ADVANCE OFF
EOHD    ;   HD
EOHI    ;   H IN
EOHO    ;   H OUT
ESPLD   ; LINE DO
EXT     ; EXT
FH      ; FH
FLDOE   ; FIELD O/E
FRB     ; FIRST REVERSE BIDIREX
HBLK    ; H BLANKING PULSE
HCK IN  ; HCK IN
HCK OT  ; HCK OUT
HD      ; HD
HR      ; HR
HRCK    ; 1/2 READ CK
LALST   ; LINE ALTERNATE SET
LALT    ; LINE ALTERNATE
LALTR   ; LINE ALTERNATE RESET
MODE 1  ; MODE 1
MODE 2  ; MODE 2
NOCON   ; CONF1
PSC     ; PROCESS SC OUT
RCLP    ; READ CLAMP PULSE
REC     ; REC
REFNI   ; REF N/I
REFOE   ; REF O/E
RCK     ; READ CK
RZERO   ; READ ZERO
SC      ; SC OUT
SV 1    ; SV 1
SV 2    ; SV 2
SYNCI   ; SYNC IN
SYNOT   ; SYNC OUT
TEST    ; TEST
TGC     ; TGC
UB      ; Umatic/Betacam
VD      ; VD
VR      ; V RESET
V SET   ; V SET
WVCRZ   ; CHROMA READ ZERO
ZEROK   ; ZERO CK
ZEROG   ; ZERO GATE
```

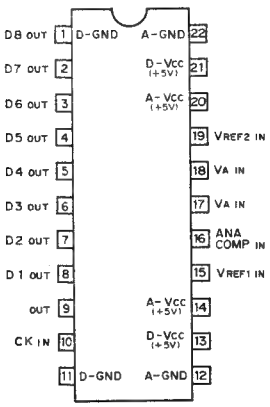
M5109P (MITSUBISHI)
DIFFERENTIAL AMPLIFIER
— TOP VIEW —

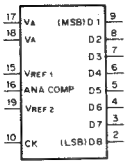


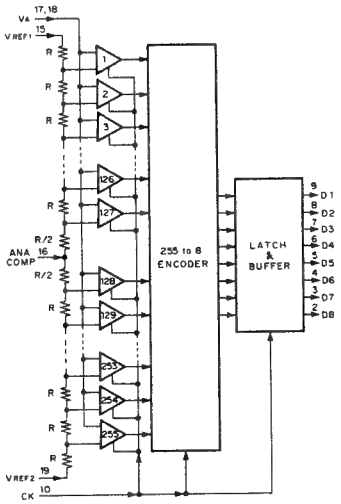
MB4002PF (FUJITSU) FLAT PACKAGE
VOLTAGE COMPARATOR
— TOP VIEW —



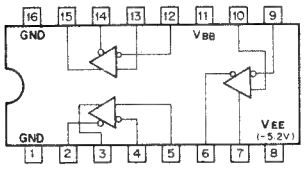
MB40578P (FUJITSU)
8-BIT VIDEO A/D CONVERTER
— TOP VIEW —



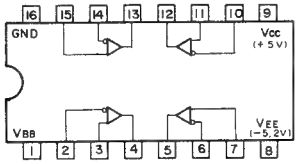




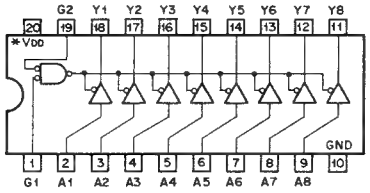
MC10H116M (MOTOROLA) FLAT PACKAGE
ECL DIFFERENTIAL OR/NOR LINE RECEIVER
— TOP VIEW — MC10116L

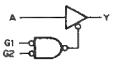


MC10H125M (MOTOROLA) FLAT PACKAGE
ECL ECL-TO-TTL TRANSLATOR
— TOP VIEW — MC10125L



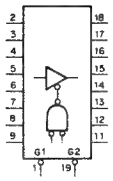
MC74HC541F (MOTOROLA) FLAT PACKAGE
SN74HCT541NS (TI) FLAT PACKAGE
C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
— TOP VIEW —





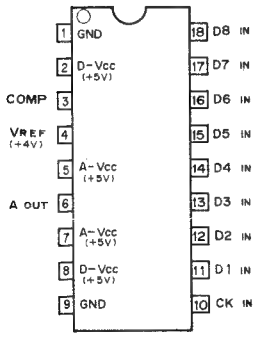
G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

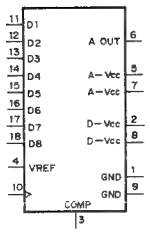
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE



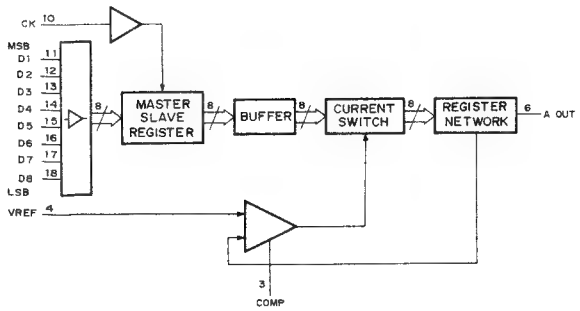
* VDD HC ; +2 to +6V
HCT ; +5V

MB40778P (FUJITSU)
8-BIT VIDEO D/A CONVERTER
— TOP VIEW —

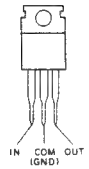




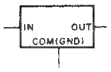
A OUT ; ANALOG OUTPUT
CK ; CLOCK INPUT
COMP ; COMPENSATION
D1-D8 ; DIGITAL INPUTS
VREF ; REFERENCE VOLTAGE INPUT



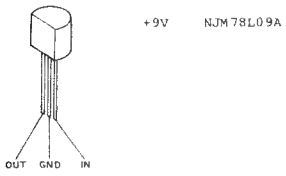
NJM78 ? ?A (JRC)
uPC78 ? ?H (NEC)
POSITIVE VOLTAGE REGULATOR (1A)
— SIDE VIEW —



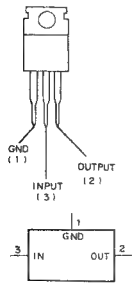
+5V NJM7805A/K
+5V uPC7805H



NJM78L ? ?A (NEC)
POSITIVE VOLTAGE REGULATOR (100mA)

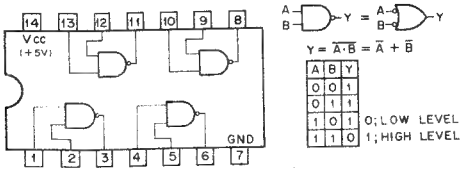


NJM79 ? ?A (JRC)
NEGATIVE VOLTAGE REGULATOR (1A)
— SIDE VIEW —



OUTPUT VOLTAGE	??
−5 V	05
−6 V	06
−8 V	08
−9 V	09
−12 V	12
−15 V	15
−18 V	18
−24 V	24

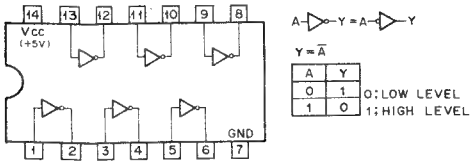
SN74LS00NS (TI) FLAT PACKAGE
TTL 2-INPUT POSITIVE-NAND GATE
— TOP VIEW —



A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

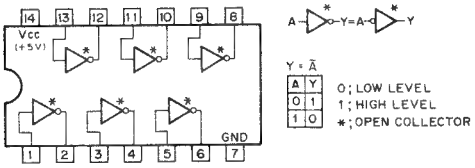
SN74LS04NS (TI) FLAT PACKAGE
TTL INVERTER
— TOP VIEW —



A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

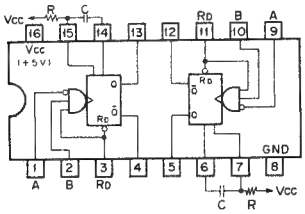
SN74LS06NS (TI) FLAT PACKAGE
TTL INVERTER BUFFER/DRIVER WITH OPEN-COLLECTOR
— TOP VIEW —



A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL
*; OPEN COLLECTOR

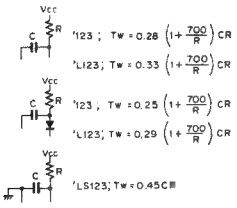
SN74LS123NS (TI) FLAT PACKAGE
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —



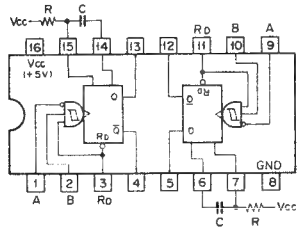
INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH



SN74LS221NS (TI) FLAT PACKAGE
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
— TOP VIEW —

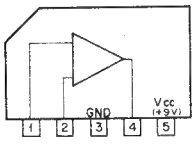


INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

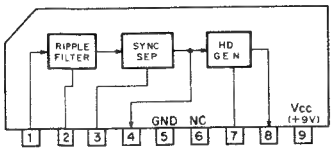
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.7CR

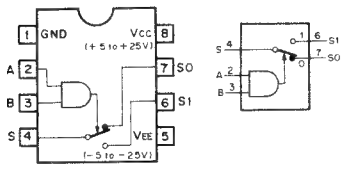
TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —



TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —



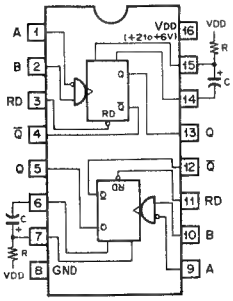
TL601CPS (TI) FLAT PACKAGE
P-MOS ANALOG SWITCH
— TOP VIEW —



CONT IN		ON CHANNEL
A	B	
0	0	SO
0	1	SO
1	0	SO
1	1	S1

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74HC123F (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —

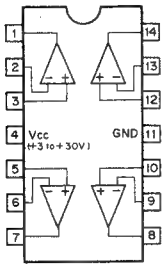


INPUT			OUTPUT	
RD	A	B	Q	$\overline{Q}$
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↓	↓	↓
1	↓	1	↓	↓
↓	0	1	↓	↓

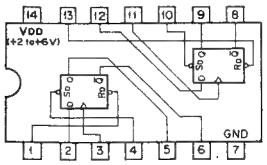
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

uPC324G2 (NEC) FLAT PACKAGE
QUAD. OP AMPLIFIER
— TOP VIEW —



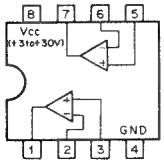
TC74HC74F (TOSHIBA) FLAT PACKAGE
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —



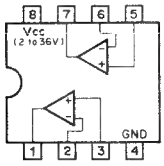
INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Q_{n+1}}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1*	1*
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Q_n}$

0; LOW LEVEL
1 ; HIGH LEVEL
X; DON'T CARE
1*; NONSTABLE

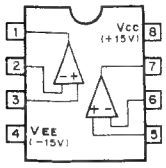
uPC358G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —



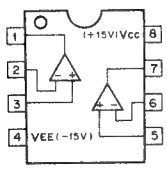
uPC393G2 (NEC) FLAT PACKAGE
VOLTAGE COMPARATOR
— TOP VIEW —



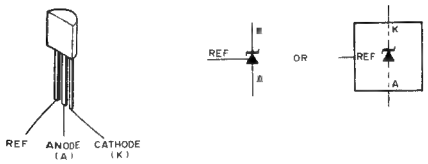
TL082CPS (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW — TL082CP



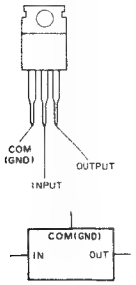
uPC4558G2 (NEC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
— TOP VIEW —



TL431CLPB (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR

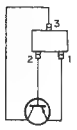


uPC79 ? ?H (NEC)
NEGATIVE VOLTAGE REGULATOR (1A)
— SIDE VIEW —

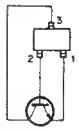


-5V uPC7905H

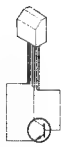
TOP VIEW (SCALE 4/1) 2SA1330 2SA812



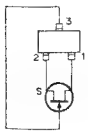
TOP VIEW (SCALE 4/1) 2SC1623 2SC2223 2SC3326



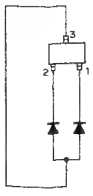
2SD773



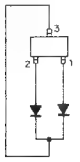
TOP VIEW (SCALE 4/1) 2SK94



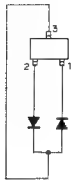
TOP VIEW (SCALE 4/1) 1S2835



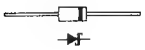
TOP VIEW (SCALE 4/1) 1S2837



TOP VIEW (SCALE 4/1) 1SS123



1SS97



FC51M FC54M

TOP VIEW (SCALE 4/1) RD ? ?MB?

SECTION 6
SCHEMATIC DIAGRAMS

回路図内において、REF. NO の近傍に下記記号が記載されていますが、これは生産時の部品データです。

In the schematic diagrams, the following marks are described nearby reference number. These are parts data at factory.

CAPACITOR (C)

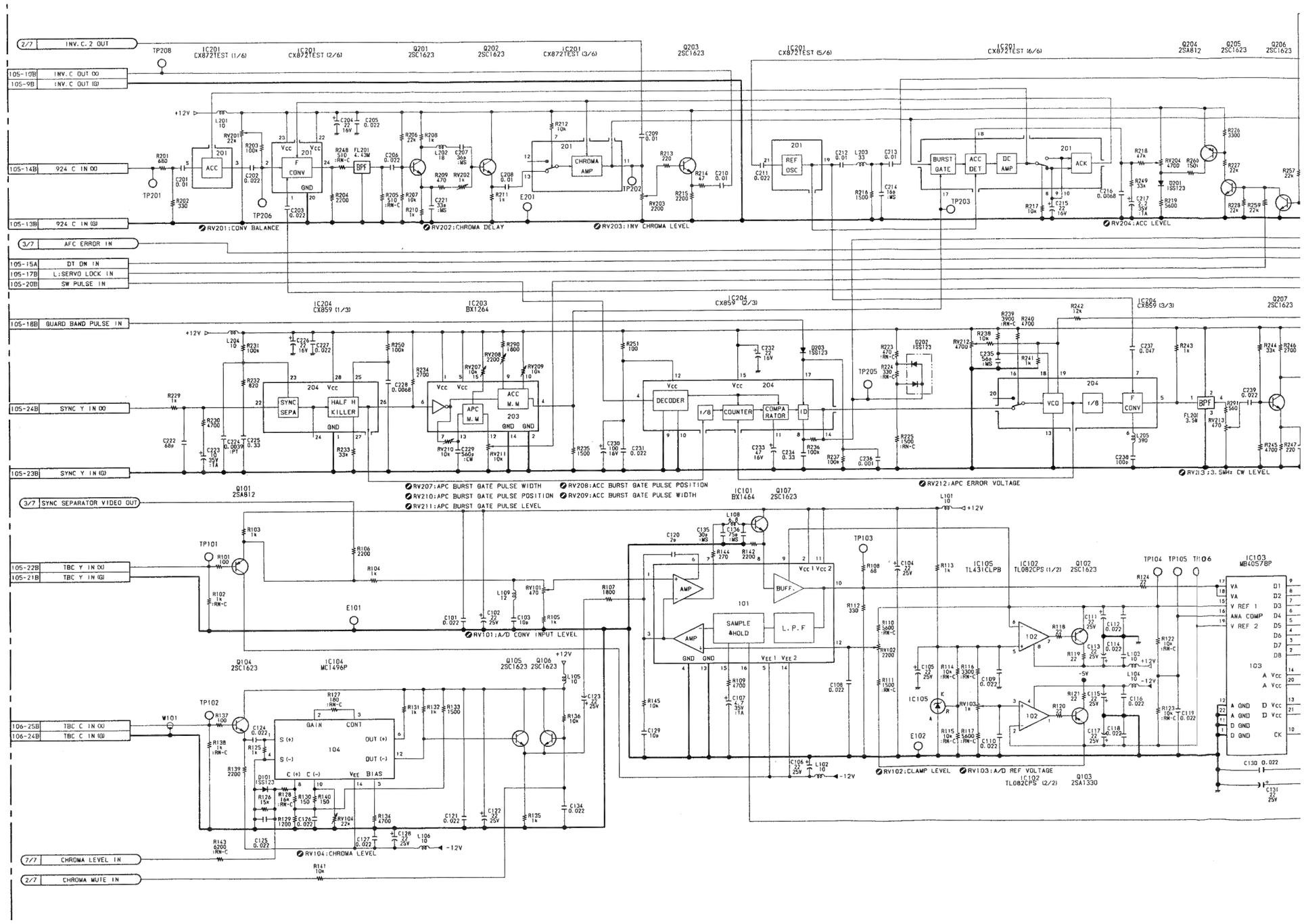
AL, AS	ELECTROLYTIC
TA	TANTALUM
CA, CC, CCS, CM, CS	CERAMIC
MPS, PP, PS, PT	MYLAR
MD	DIPPED MICA
MS	MICA

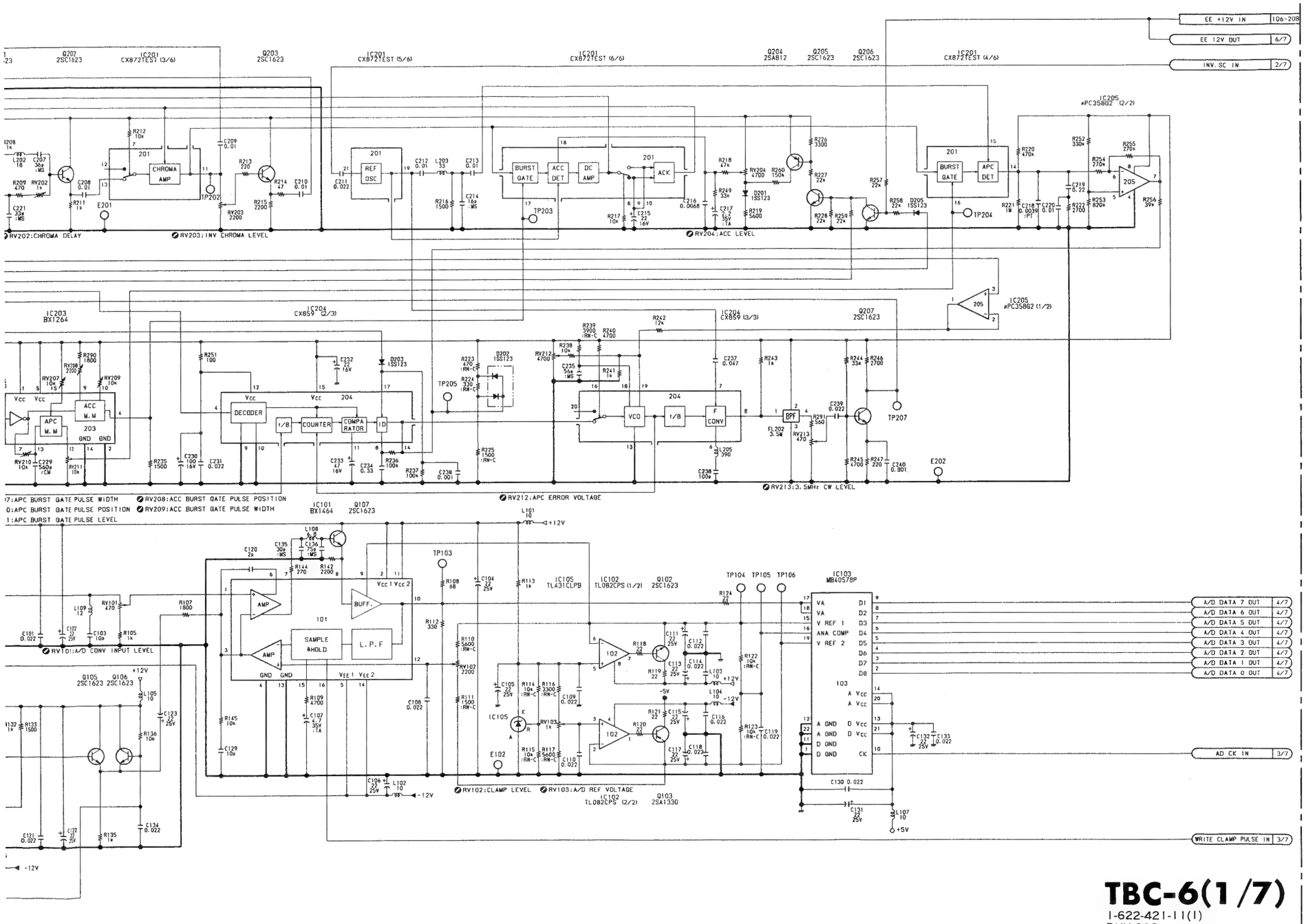
RESISTOR (R)
VARIABLE RESISTOR (RV)

RC, RD	CARBON
RF	FUSE
RN, RS	METAL
RW	WIREWOUND

TBC-6(1/7) TBC-6(1

TBC-6(1/7); INPUT SIGNAL BLOCK



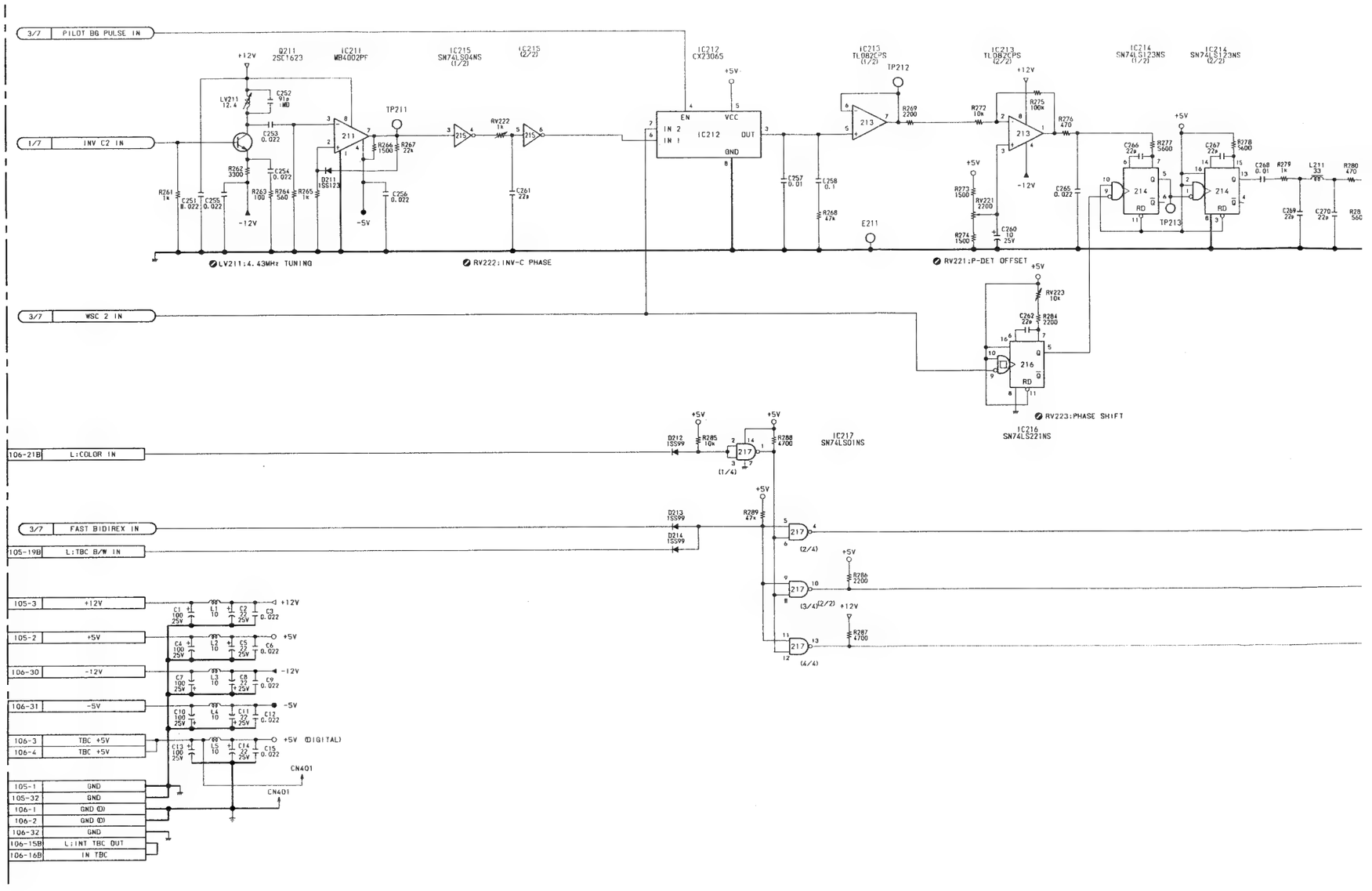


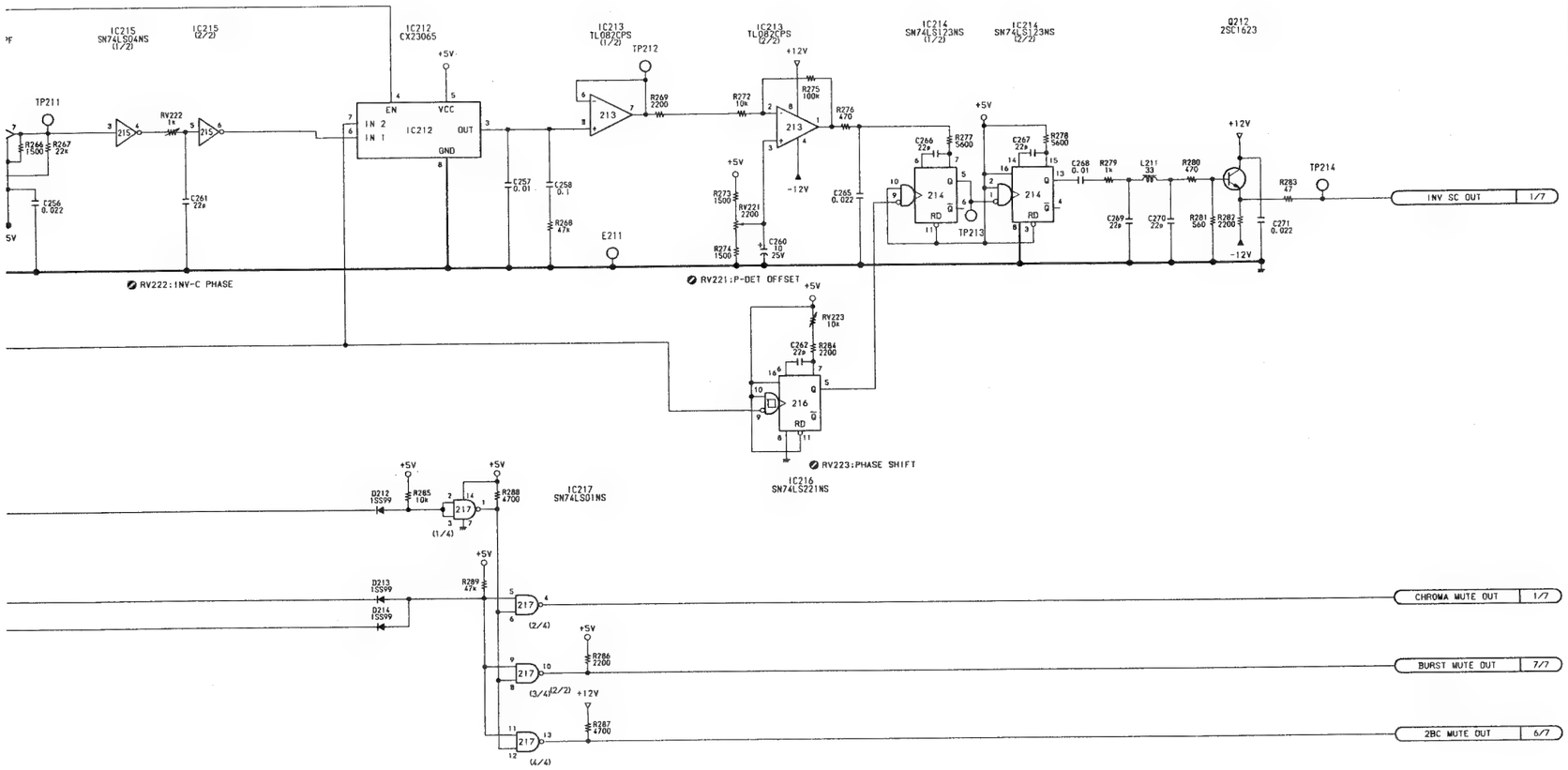
TBC-6(1/7)
1-622-421-11(1)
BKU-903

E F G H I J K L

TBC-6(2/7) TBC-(

TBC-6(2/7); INPUT SIGNAL BLOCK





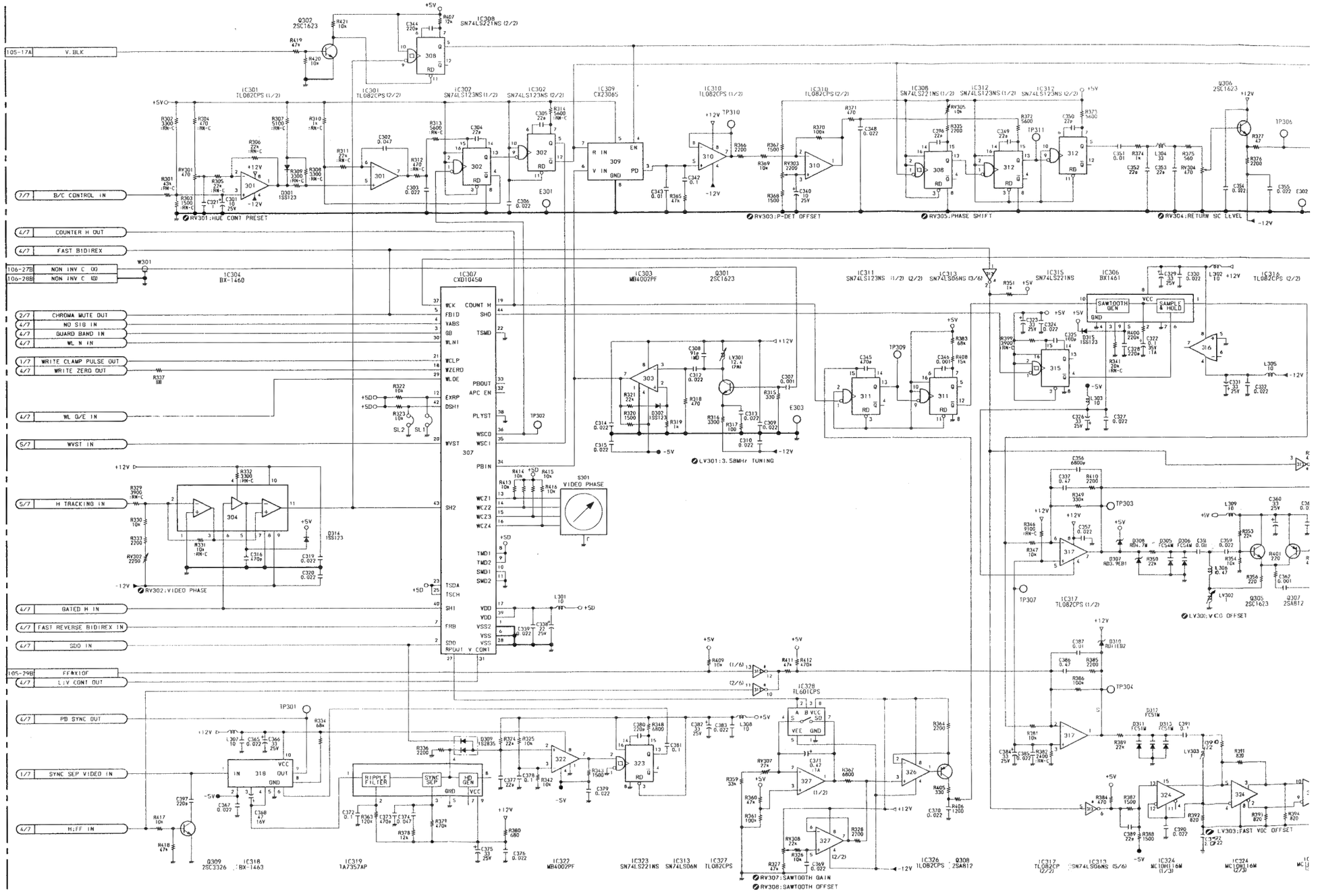
TBC-6(2/7)

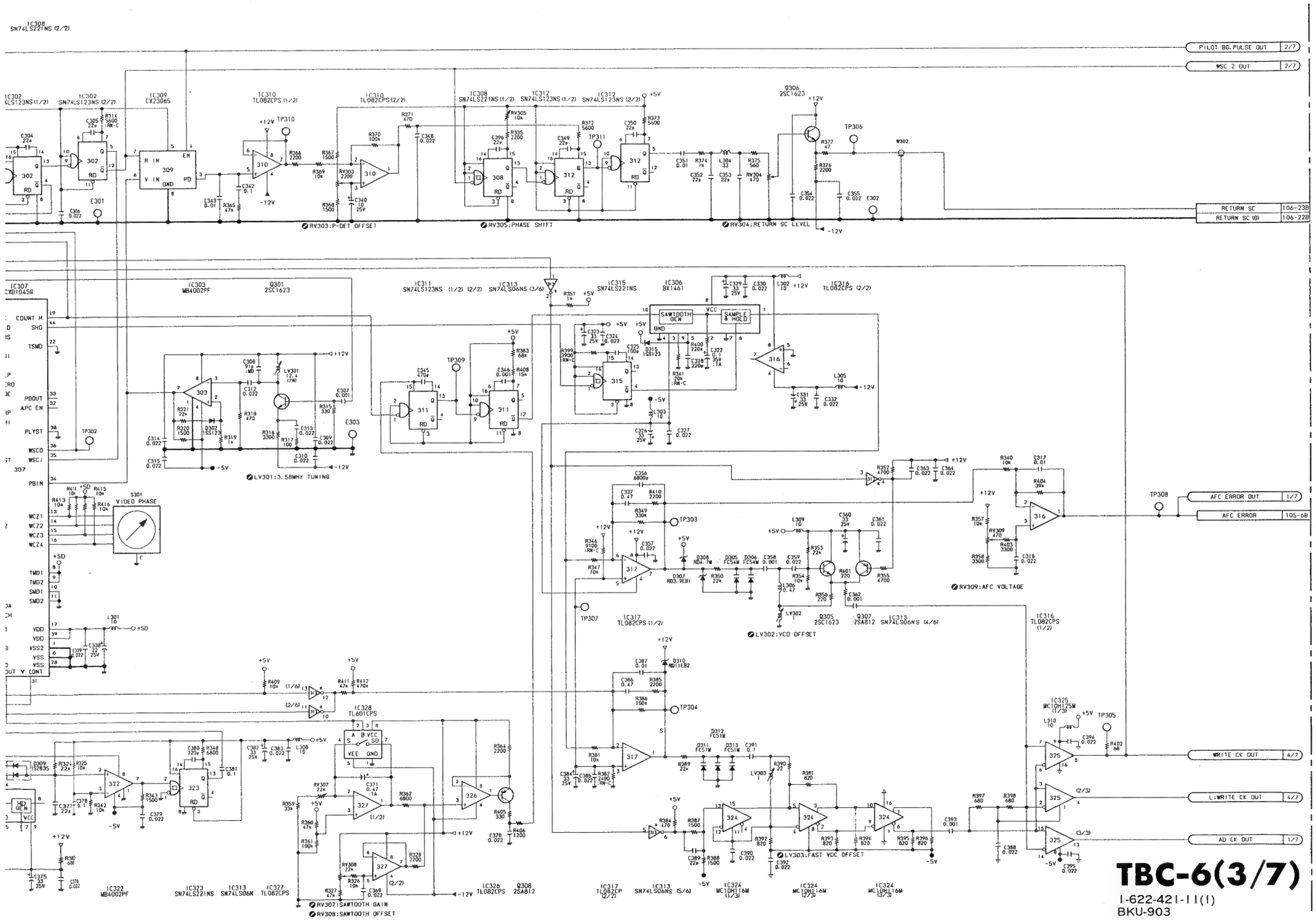
I-622-421-11(1)
BKU-903

E F G H I J K L

TBC-6(3/7) TBC-6

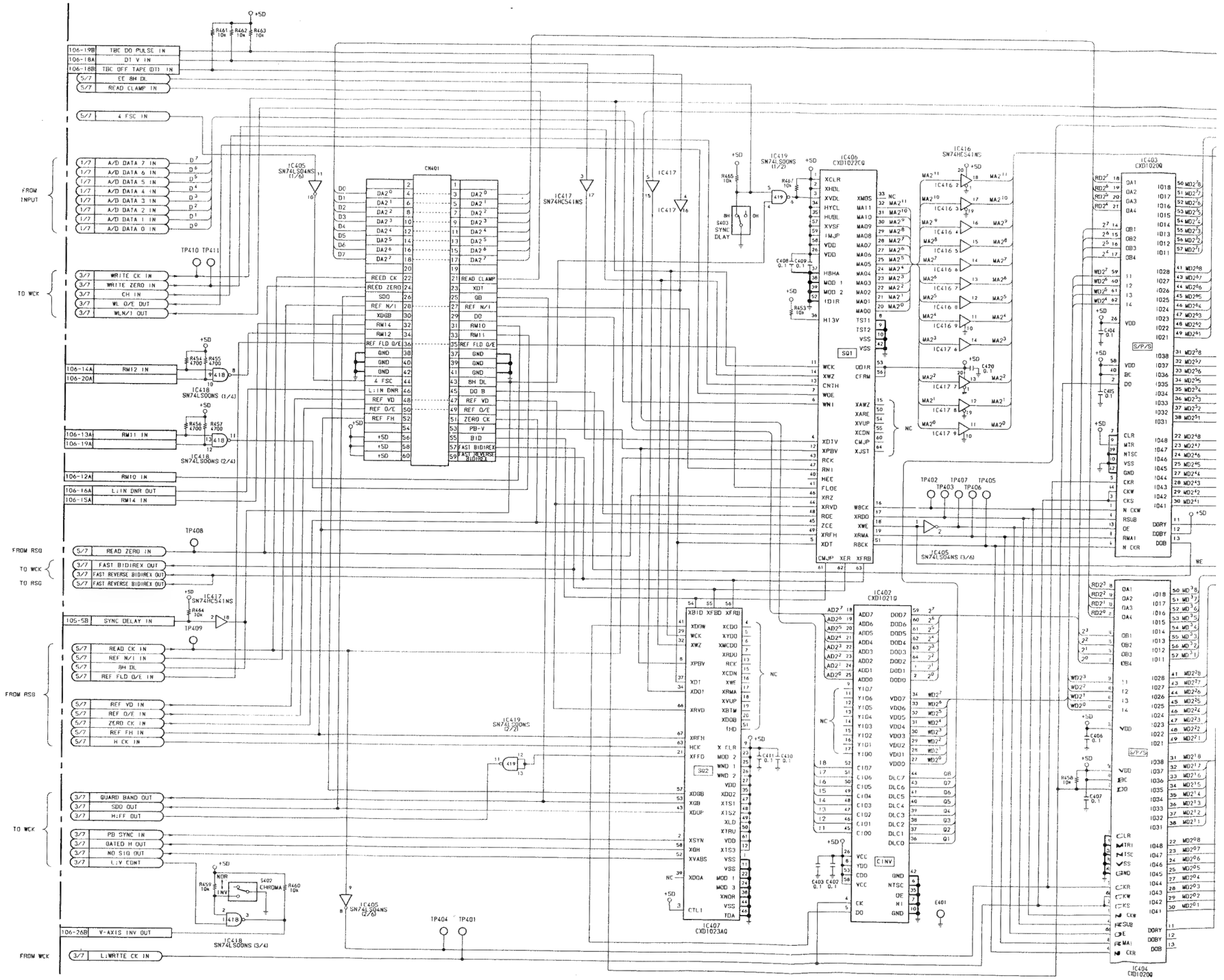
TBC-6(3/7); WRITE CLOCK BLOCK

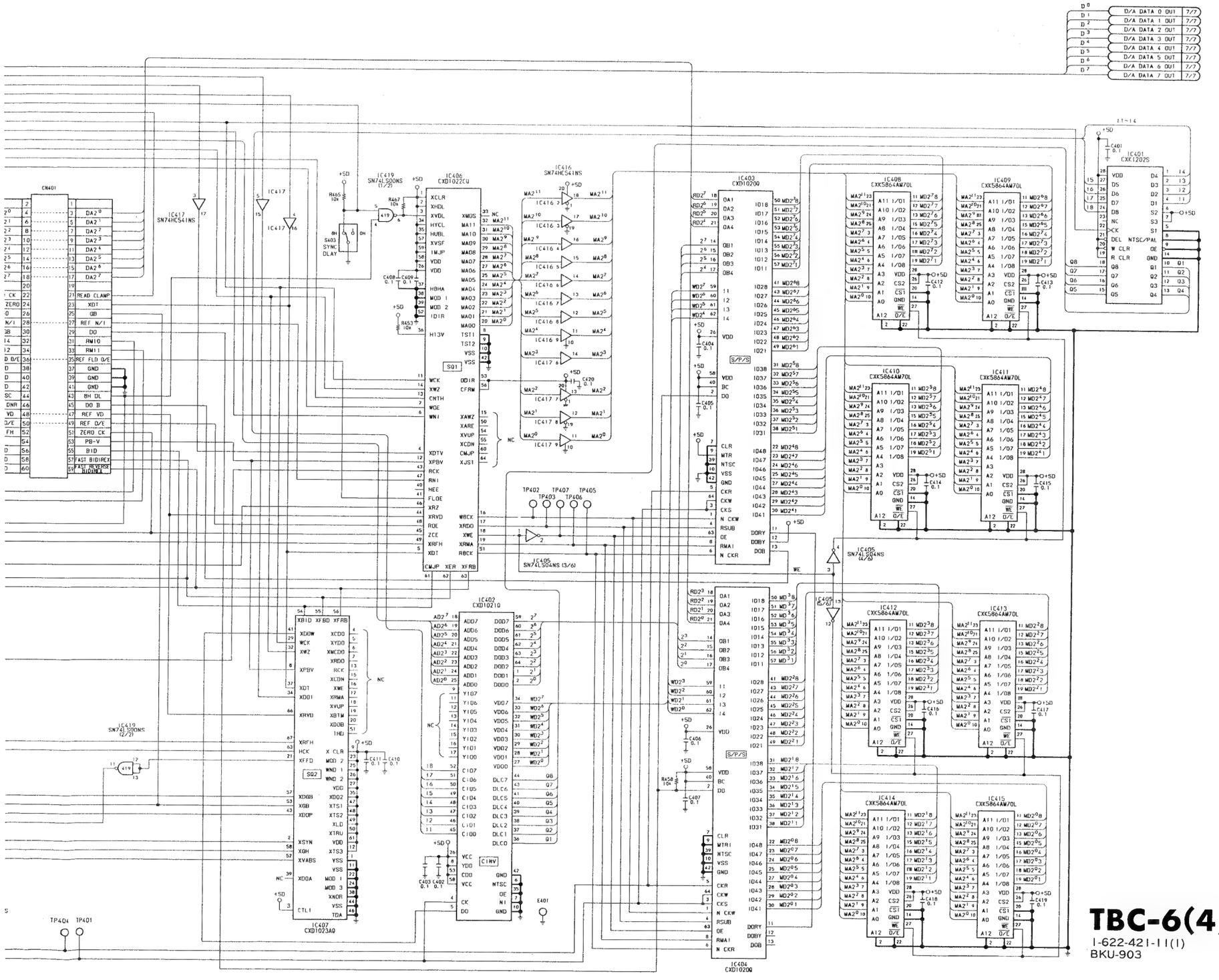



PILOT BG.PULSE OUT 2/7
WSC 2 OUT 2/7
RETURN SC 106-23B
RETURN SC (B) 106-22B
AFC ERROR OUT 1/7
AFC ERROR 105-6B
WRITE CK OUT 4/7
L:WRITE CK OUT 4/7
AD CK OUT 1/7
RV303:P-DET OFFSET
RV305:PHASE SHIFT
RV304:RETURN SC LEVEL
LV301:3.58MHz TUNING
RV307:SAWTOOTH GAIN
RV308:SAWTOOTH OFFSET
LV302:VCO OFFSET
LV303:FAST VDC OFFSET
RV309:AFC VOLTAGE
S301 VIDEO PHASE
IC307 CXD1045Q
IC303 MB4002PF
Q301 2SC1623
IC311 SN74LS123NS (1/2) (2/2)
IC313 SN74LS06NS (3/6)
IC315 SN74LS221NS
IC306 BX1461
IC316 TL082CPS (2/2)
IC308 SN74LS221NS (1/2)
IC312 SN74LS123NS (1/2) (2/2)
IC309 CX23065
IC310 TL082CPS (1/2) (2/2)
IC302 SN74LS123NS (2/2)
IC307 SN74LS123NS (1/2)
Q306 2SC1623
IC317 TL082CPS (1/2)
Q305 2SC1623
Q307 2SA812
IC313 SN74LS06NS (4/6)
IC316 TL082CPS (1/2)
IC325 MC10H125M (1/3)
IC322 MB4002PF
IC323 SN74LS221NS
IC313 SN74LS06M
IC327 TL082CPS
IC328 TL601CPS
IC326 TL082CPS
Q308 2SA812
IC317 TL082CP (2/2)
IC313 SN74LS06NS (5/6)
IC324 MC10H116M (1/3)
IC324 MC10H116M (2/3)
IC324 MC10H116M (3/3)
TBC-6(3/7)
1-622-421-11(1)
BKU-903

TBC-6(4/7): MEMORY CONTROL BLOCK

TBC-6(4/7) TBC





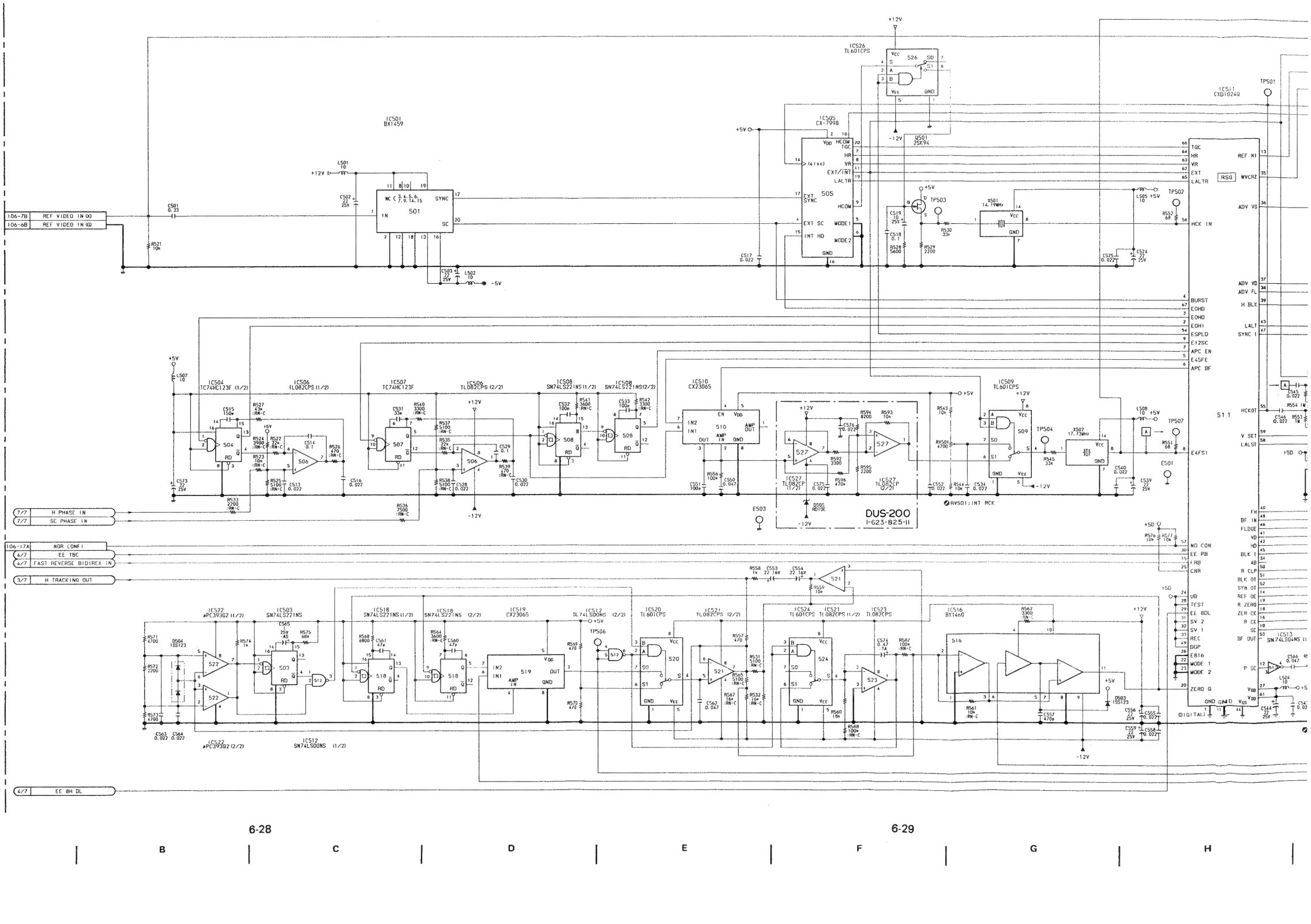
TBC-6(4/7)

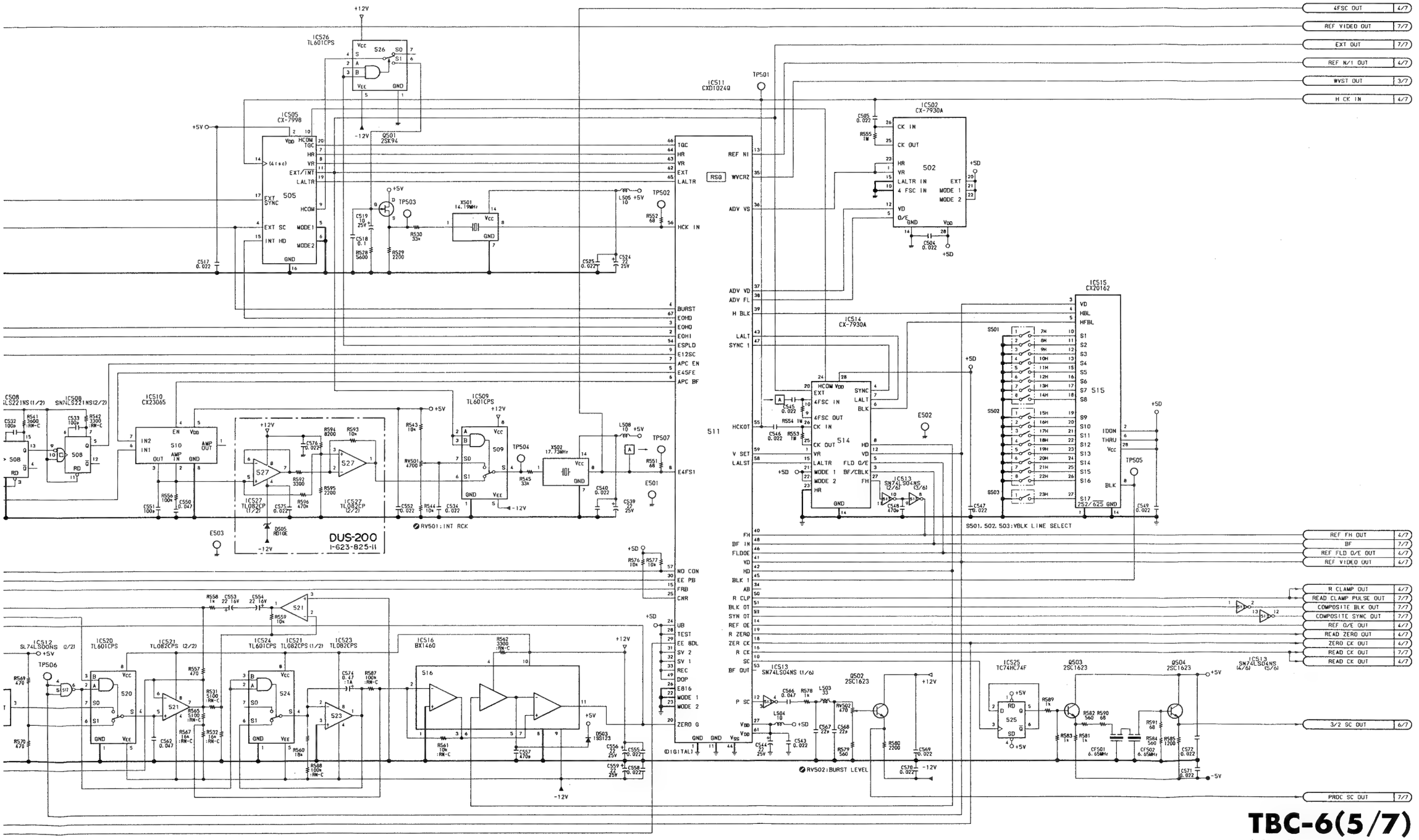
1-622-421-11(1)

BKU-903

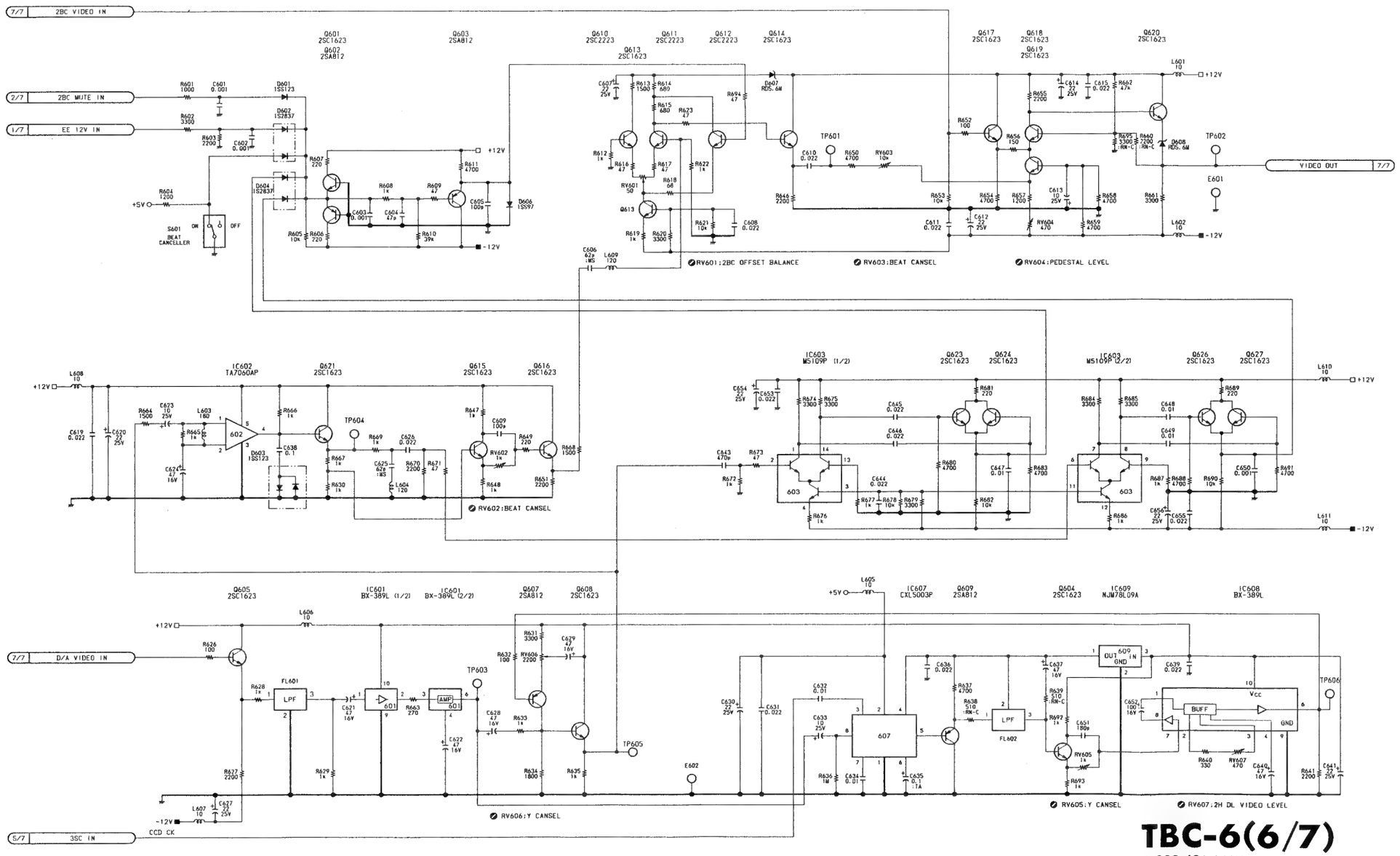
TBC-6(5/7), DUS-200 TBC-

TBC-6(5/7); REFERENCE SYNC GENERATOR BLOCK
DUS-200; DC AMP




4FSC OUT 4/7
REF VIDEO OUT 7/7
EXT OUT 7/7
REF N/1 OUT 4/7
WVST OUT 3/7
H CK IN 4/7
REF FH OUT 4/7
BF 7/7
REF FLD O/E OUT 4/7
REF VIDEO OUT 4/7
R CLAMP OUT 4/7
READ CLAMP PULSE OUT 7/7
COMPOSITE BLK OUT 7/7
COMPOSITE SYNC OUT 7/7
REF O/E OUT 4/7
READ ZERO OUT 4/7
ZERO CK OUT 7/7
READ CK OUT 4/7
READ CK OUT 4/7
3/2 SC OUT 6/7
PROC SC OUT 7/7
DUS-200
I-623-825-11
TBC-6(5/7)
I-622-421-11(1)
BKU-903
RV501:INT RCK
RV502:BURST LEVEL
S501, 502, 503:VBLK LINE SELECT
(DIGITAL)
6-29
6-30

TBC-6(6/7); 2nd BEAT CANCEL BLOCK

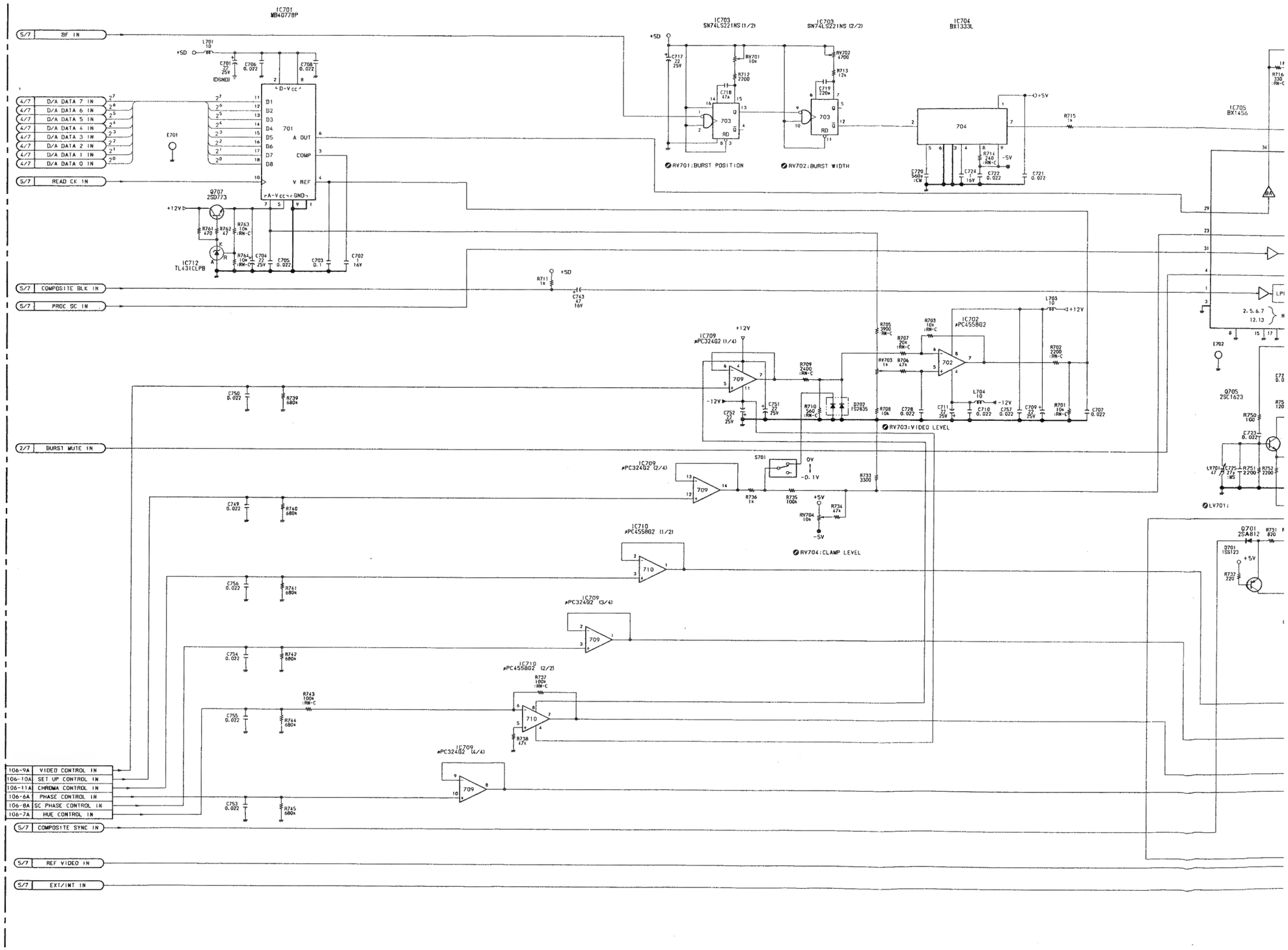


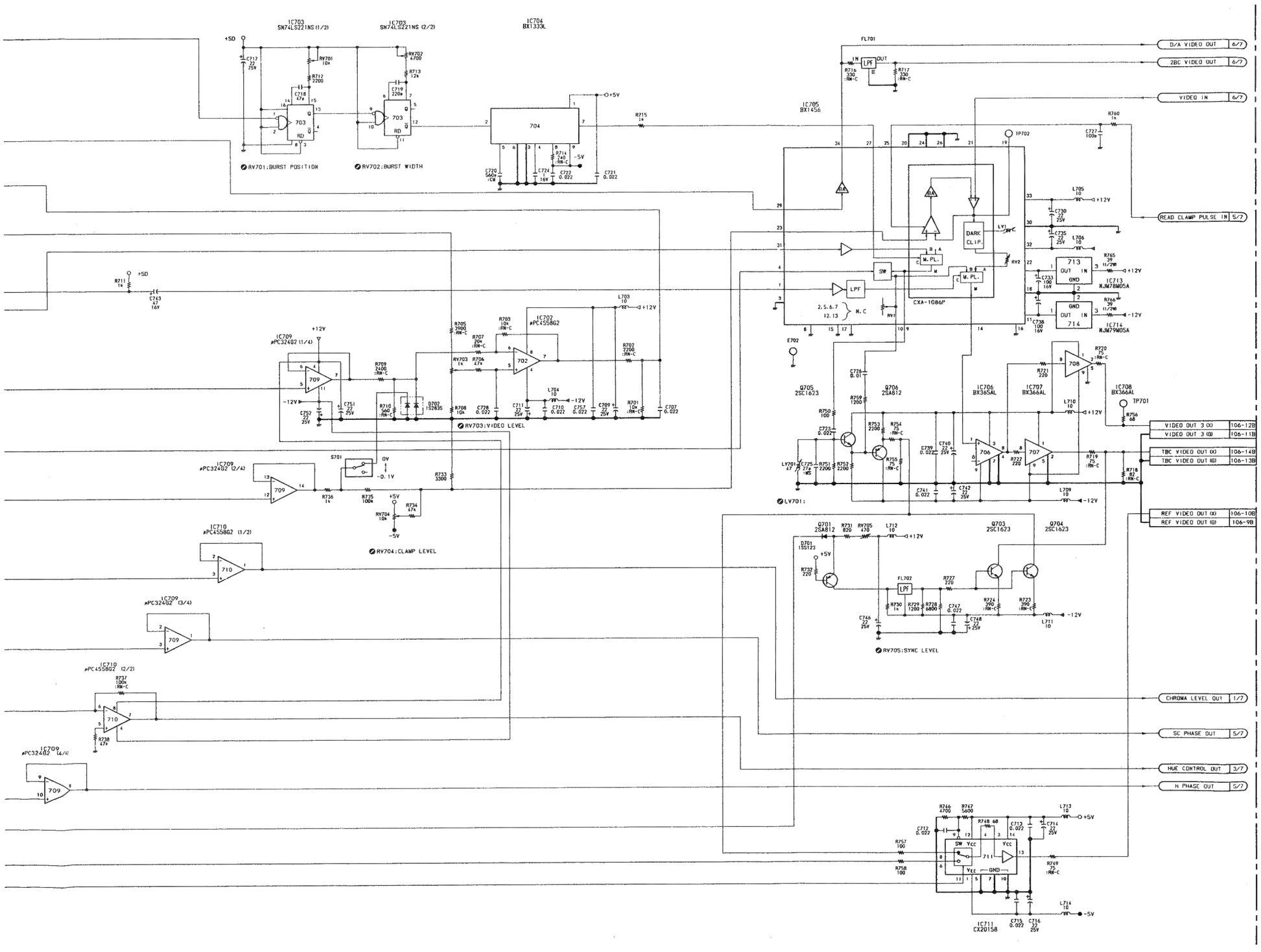
TBC-6(6/7)

1-622-421-11(1)
BKU-903

TBC-6(7/7)

TBC-6(7/7); OUTPUT SIGNAL BLOCK





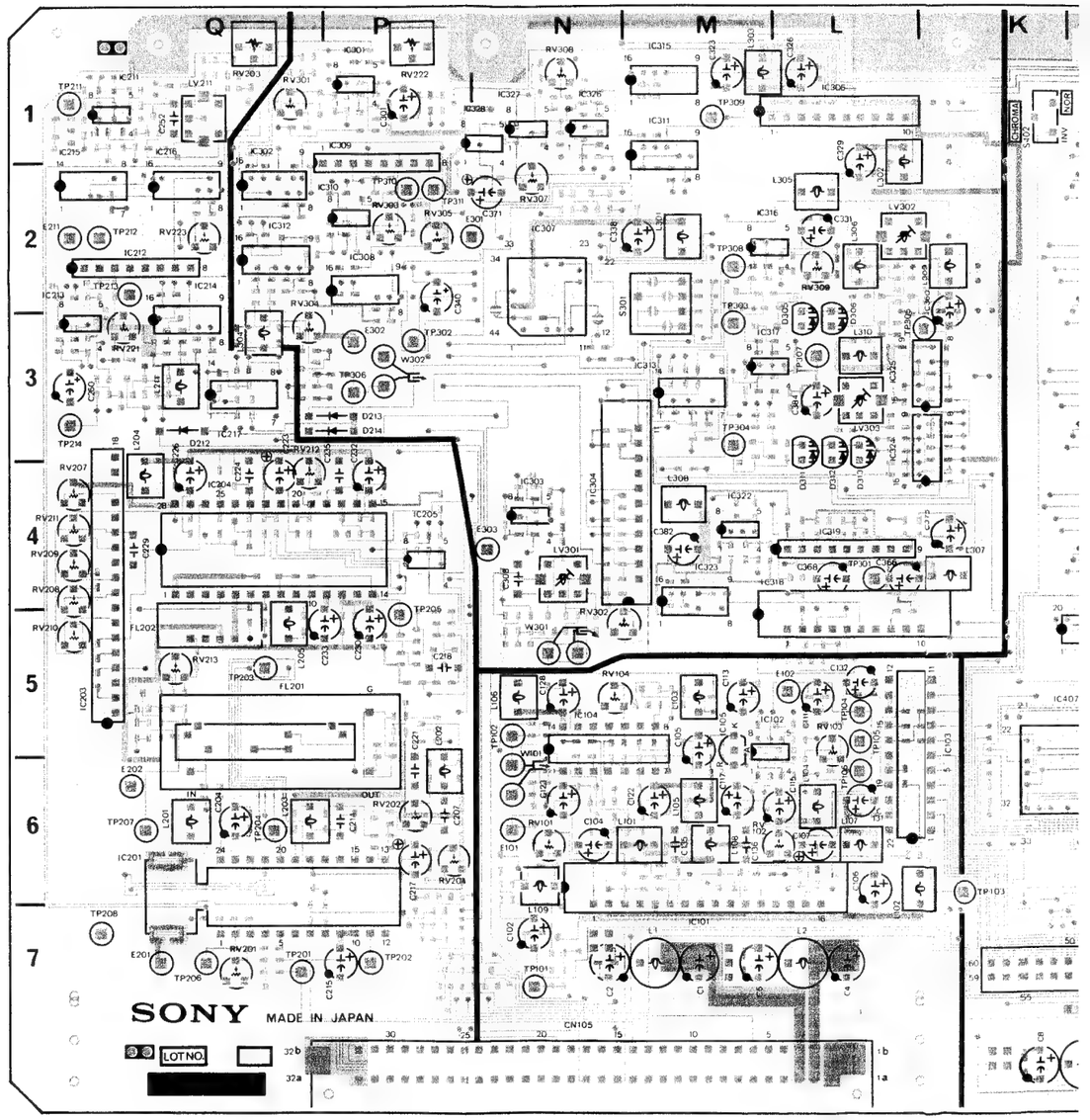
TBC-6(7/7)
1-622-421-11(1)
BKU-903

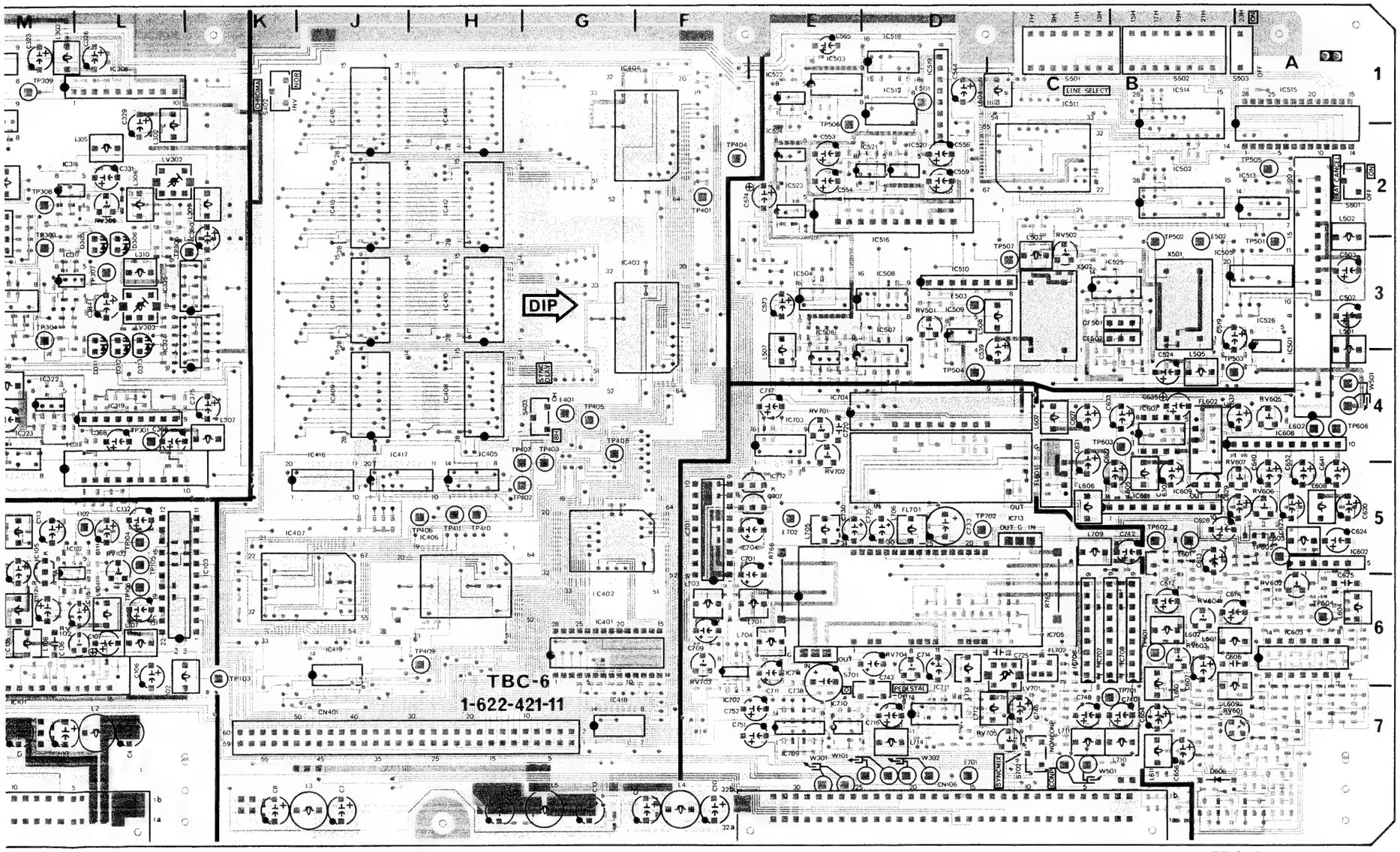
SECTION 7
PRINTED CIRCUIT BOARDS

.-622-421-11)

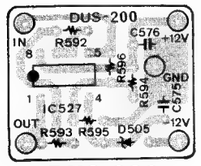
M-7	FL701	D-5	IC415	J-1	Q101	N-7	Q707	E-5	TP104	L-5
C-7	FL702	C-6	IC416	J-5	Q102	L-5			TP105	L-5
H-7			IC417	J-5	Q103	L-6	RV101	N-6	TP106	L-6
	IC101	M-6	IC418	G-7	Q104	N-5	RV102	L-6	TP201	Q-7
M-5	IC102	M-5	IC419	J-6	Q105	N-6	RV103	L-5	TP202	P-7
P-6	IC103	L-5	IC501	A-3	Q106	N-6	RV104	N-5	TP203	Q-5
P-5	IC104	N-5	IC502	B-2	Q107	M-6	RV201	Q-7	TP204	Q-6
P-4	IC105	M-5	IC503	E-1	Q201	P-5	RV202	P-6	TP205	P-5
N-7	IC201	Q-6	IC504	E-3	Q202	P-6	RV203	Q-1	TP206	Q-7
Q-1	IC203	Q-4	IC505	A-3	Q203	Q-1	RV204	P-6	TP207	Q-6
Q-3	IC204	Q-4	IC506	E-4	Q204	P-7	RV207	Q-4	TP208	Q-7
P-3	IC205	P-4	IC507	D-4	Q205	P-7	RV208	Q-4	TP211	Q-1
P-3	IC211	Q-1	IC508	D-3	Q206	P-7	RV209	Q-4	TP212	Q-2
P-1	IC212	Q-2	IC509	D-3	Q207	Q-5	RV210	Q-5	TP213	Q-2
N-4	IC213	Q-3	IC510	D-3	Q211	Q-1	RV211	Q-4	TP214	Q-3
L-3	IC214	Q-3	IC511	C-2	Q212	Q-3	RV212	Q-4	TP301	L-4
L-3	IC215	Q-2	IC512	D-1	Q301	N-5	RV213	Q-5	TP302	P-3
M-2	IC216	Q-2	IC513	A-2	Q302	N-2	RV221	Q-3	TP303	M-3
L-4	IC217	Q-3	IC514	B-1	Q305	L-2	RV222	P-1	TP304	M-3
L-3	IC301	P-1	IC515	A-1	Q306	Q-3	RV223	Q-2	TP305	K-3
L-3	IC302	Q-2	IC516	D-2	Q307	L-2	RV301	Q-1	TP306	P-3
L-3	IC303	N-4	IC518	D-1	Q308	N-1	RV302	N-5	TP307	L-3
N-4	IC304	M-4	IC519	D-1	Q309	L-5	RV303	P-2	TP308	M-2
L-1	IC306	L-1	IC520	D-2	Q501	B-3	RV304	Q-3	TP309	M-1
D-2	IC307	N-2	IC521	D-2	Q502	C-3	RV305	P-2	TP310	P-2
E-1	IC308	P-2	IC522	E-1	Q503	B-3	RV307	N-2	TP311	P-2
B-7	IC309	P-1	IC523	E-2	Q504	B-4	RV308	N-1	TP401	F-2
B-7	IC310	P-2	IC524	E-2	Q601	A-7	RV309	L-2	TP402	G-5
A-6	IC311	M-1	IC525	B-3	Q602	B-7	RV501	D-3	TP403	G-4
B-7	IC312	Q-2	IC526	A-3	Q603	A-7	RV502	C-3	TP404	F-2
B-7	IC313	M-3	IC601	B-5	Q604	B-4	RV601	A-7	TP405	G-4
B-6	IC315	M-1	IC602	A-5	Q605	C-5	RV602	A-6	TP406	H-5
B-5	IC316	M-2	IC603	A-6	Q607	A-5	RV603	B-6	TP407	G-4
D-7	IC317	M-3	IC607	B-4	Q608	A-5	RV604	B-6	TP408	G-4
E-6	IC318	L-5	IC608	A-4	Q609	B-4	RV605	A-4	TP409	H-6
	IC319	L-4	IC609	B-5	Q610	B-7	RV606	A-5	TP410	H-5
N-6	IC322	M-4	IC701	F-5	Q611	B-7	RV607	A-5	TP411	H-5
L-5	IC323	M-4	IC702	F-6	Q612	B-7	RV701	E-4	TP501	A-3
Q-7	IC324	K-3	IC703	E-4	Q613	B-7	RV702	E-4	TP502	B-3
Q-6	IC325	K-3	IC704	D-4	Q614	B-7	RV703	F-6	TP503	B-4
Q-2	IC326	N-1	IC705	D-6	Q615	A-6	RV704	D-6	TP504	D-4
N-2	IC327	N-1	IC706	C-6	Q616	A-6	RV705	C-7	TP505	A-2
P-3	IC328	N-1	IC707	B-6	Q617	A-6			TP506	E-1
N-4	IC401	G-6	IC708	B-6	Q618	B-5	S301	M-2	TP507	C-3
G-4	IC402	G-5	IC709	E-7	Q619	B-6	S401		TP601	B-6
D-1	IC403	F-3	IC710	E-7	Q620	B-6	S402	K-1	TP602	B-5
B-3	IC404	F-2	IC711	D-7	Q621	A-6	S403	G-4	TP603	B-4
D-3	IC405	H-5	IC712	E-5	Q623	A-7	S501	C-1	TP604	A-6
B-5	IC406	H-6	IC713	C-5	Q624	A-7	S502	B-1	TP605	A-5
A-4	IC407	J-6	IC714	E-6	Q626	A-7	S503	A-1	TP606	A-4
D-7	IC408	H-4			Q627	A-7	S601	A-2	TP701	B-7
E-5	IC409	J-4	LV211	Q-1	Q701	D-7	S701	D-7	TP702	D-5
	IC410	H-3	LV301	N-4	Q702	C-7	S702	C-7		
Q-5	IC411	J-3	LV302	L-2	Q703	C-7			X501	B-3
Q-5	IC412	H-2	LV303	L-3	Q704	C-7	TP101	N-7	X502	C-3
C-5	IC413	J-2	LV701	C-6	Q705	D-6	TP102	N-5		
B-4	IC414	H-1			Q706	C-6	TP103	K-6		

TBC-6; TIME BASE CORRECTOR
DUS-151; CONNECTION BOARD
DUS-200; DC AMP

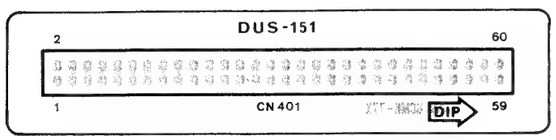




TBC-6 —COMPONENT SIDE—
1-622-421-11(1)
BKU-903



DUS-200
—COMPONENT SIDE—
1-623-825-11(1)
BKU-903

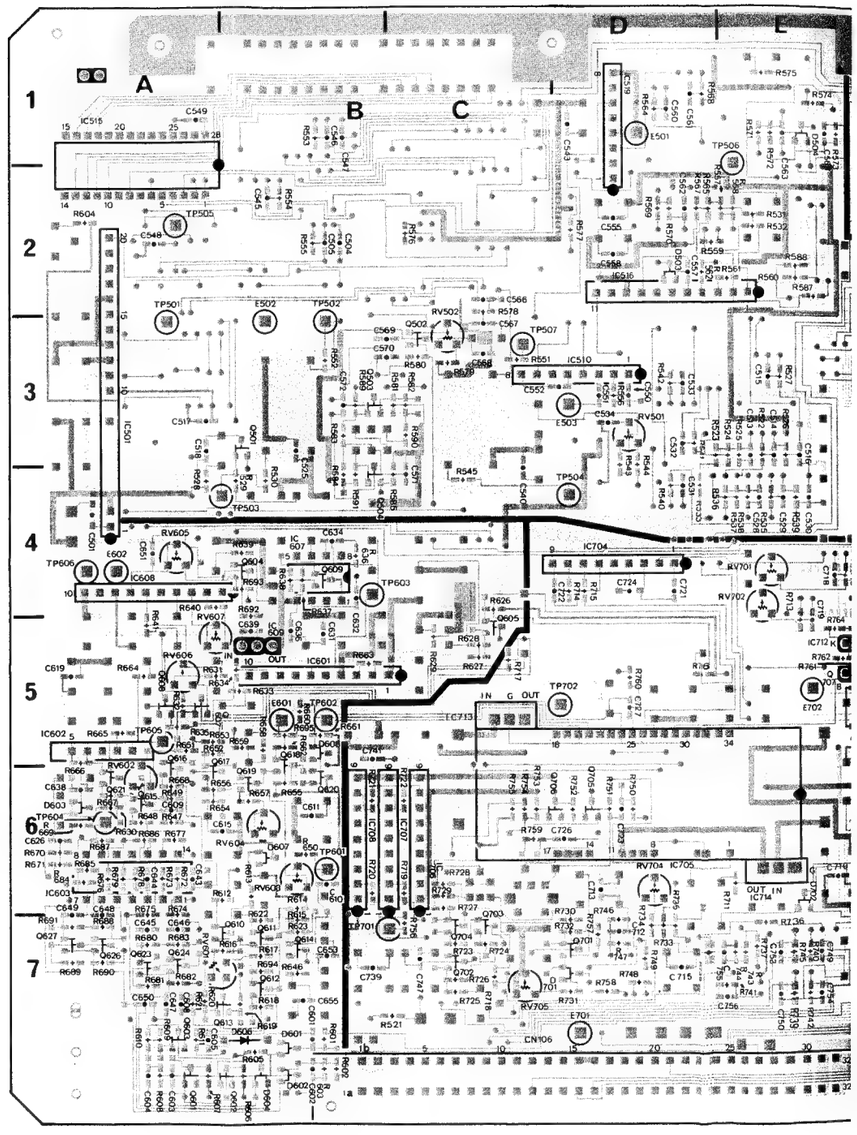


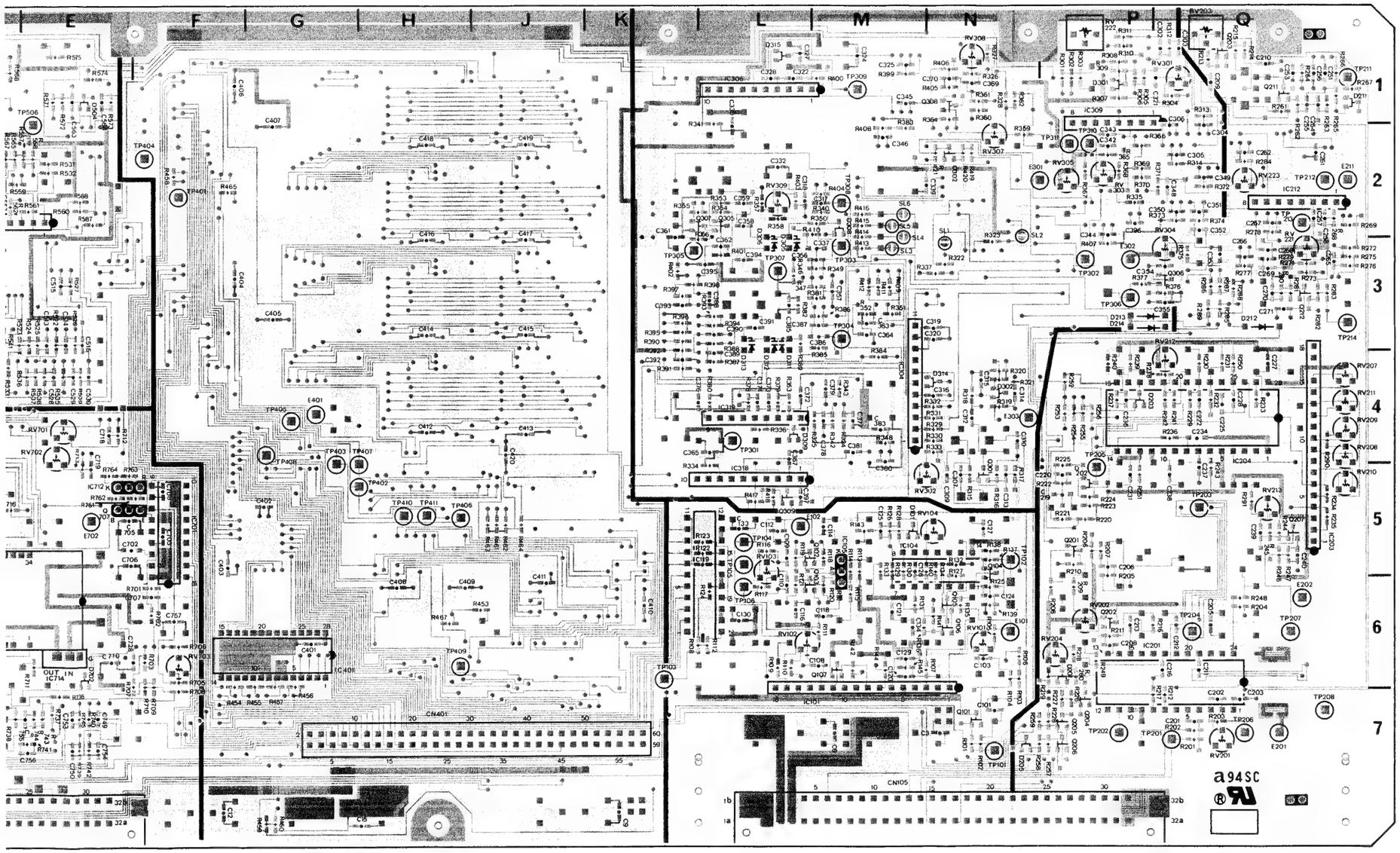
DUS-151 —COMPONENT SIDE—
1-622-424-11(1)
BKU-903

TBC-6: TIME BASE CORRECTOR

TBC-6(1-622-421-11)

CN105	M-7	FL701	D-5	IC415	J-1	Q101	N-7	Q707	E-5	TP104	L-5
CN106	C-7	FL702	C-6	IC416	J-5	Q102	L-5			TP105	L-5
CN401	H-7			IC417	J-5	Q103	L-6	RV101	N-6	TP106	L-6
		IC101	M-6	IC418	G-7	Q104	N-5	RV102	L-6	TP201	Q-7
D101	M-5	IC102	M-5	IC419	J-6	Q105	N-6	RV103	L-5	TP202	P-7
D201	P-6	IC103	L-5	IC501	A-3	Q106	N-6	RV104	N-5	TP203	Q-5
D202	P-5	IC104	N-5	IC502	B-2	Q107	M-6	RV201	Q-7	TP204	Q-6
D203	P-4	IC105	M-5	IC503	E-1	Q201	P-5	RV202	P-6	TP205	P-5
D205	N-7	IC201	Q-6	IC504	E-3	Q202	P-6	RV203	Q-1	TP206	Q-7
D211	Q-1	IC203	Q-4	IC505	A-3	Q203	Q-1	RV204	P-6	TP207	Q-6
D212	Q-3	IC204	Q-4	IC506	E-4	Q204	P-7	RV207	Q-4	TP208	Q-7
D213	P-3	IC205	P-4	IC507	D-4	Q205	P-7	RV208	Q-4	TP211	Q-1
D214	P-3	IC211	Q-1	IC508	D-3	Q206	P-7	RV209	Q-4	TP212	Q-2
D301	P-1	IC212	Q-2	IC509	D-3	Q207	Q-5	RV210	Q-5	TP213	Q-2
D302	N-4	IC213	Q-3	IC510	D-3	Q211	Q-1	RV211	Q-4	TP214	Q-3
D305	L-3	IC214	Q-3	IC511	C-2	Q212	Q-3	RV212	Q-4	TP301	L-4
D306	L-3	IC215	Q-2	IC512	D-1	Q301	N-5	RV213	Q-5	TP302	P-3
D308	M-2	IC216	Q-2	IC513	A-2	Q302	N-2	RV221	Q-3	TP303	M-3
D309	L-4	IC217	Q-3	IC514	B-1	Q305	L-2	RV222	P-1	TP304	M-3
D311	L-3	IC301	P-1	IC515	A-1	Q306	Q-3	RV223	Q-2	TP305	K-3
D312	L-3	IC302	Q-2	IC516	D-2	Q307	L-2	RV301	Q-1	TP306	P-3
D313	L-3	IC303	N-4	IC518	D-1	Q308	N-1	RV302	N-5	TP307	L-3
D314	N-4	IC304	M-4	IC519	D-1	Q309	L-5	RV303	P-2	TP308	M-2
D315	L-1	IC306	L-1	IC520	D-2	Q501	B-3	RV304	Q-3	TP309	M-1
D503	D-2	IC307	N-2	IC521	D-2	Q502	C-3	RV305	P-2	TP310	P-2
D504	E-1	IC308	P-2	IC522	E-1	Q503	B-3	RV307	N-2	TP311	P-2
D601	B-7	IC309	P-1	IC523	E-2	Q504	B-4	RV308	N-1	TP401	F-2
D602	B-7	IC310	P-2	IC524	E-2	Q601	A-7	RV309	L-2	TP402	G-5
D603	A-6	IC311	M-1	IC525	B-3	Q602	B-7	RV501	D-3	TP403	G-4
D604	B-7	IC312	Q-2	IC526	A-3	Q603	A-7	RV502	C-3	TP404	F-2
D606	B-7	IC313	M-3	IC601	B-5	Q604	B-4	RV601	A-7	TP405	G-4
D607	B-6	IC315	M-1	IC602	A-5	Q605	C-5	RV602	A-6	TP406	H-5
D608	B-5	IC316	M-2	IC603	A-6	Q607	A-5	RV603	B-6	TP407	G-4
D701	D-7	IC317	M-3	IC607	B-4	Q608	A-5	RV604	B-6	TP408	G-4
D702	E-6	IC318	L-5	IC608	A-4	Q609	B-4	RV605	A-4	TP409	H-6
		IC319	L-4	IC609	B-5	Q610	B-7	RV606	A-5	TP410	H-5
E101	N-6	IC322	M-4	IC701	F-5	Q611	B-7	RV607	A-5	TP411	H-5
E102	L-5	IC323	M-4	IC702	F-6	Q612	B-7	RV701	E-4	TP501	A-3
E201	Q-7	IC324	K-3	IC703	E-4	Q613	B-7	RV702	E-4	TP502	B-3
E202	Q-6	IC325	K-3	IC704	D-4	Q614	B-7	RV703	F-6	TP503	B-4
E211	Q-2	IC326	N-1	IC705	D-6	Q615	A-6	RV704	D-6	TP504	D-4
E301	N-2	IC327	N-1	IC706	C-6	Q616	A-6	RV705	C-7	TP505	A-2
E302	P-3	IC328	N-1	IC707	B-6	Q617	A-6			TP506	E-1
E303	N-4	IC401	G-6	IC708	B-6	Q618	B-5	S301	M-2	TP507	C-3
E401	G-4	IC402	G-5	IC709	E-7	Q619	B-6	S401		TP601	B-6
E501	D-1	IC403	F-3	IC710	E-7	Q620	B-6	S402	K-1	TP602	B-5
E502	B-3	IC404	F-2	IC711	D-7	Q621	A-6	S403	G-4	TP603	B-4
E503	D-3	IC405	H-5	IC712	E-5	Q623	A-7	S501	C-1	TP604	A-6
E601	B-5	IC406	H-6	IC713	C-5	Q624	A-7	S502	B-1	TP605	A-5
E602	A-4	IC407	J-6	IC714	E-6	Q626	A-7	S503	A-1	TP606	A-4
E701	D-7	IC408	H-4			Q627	A-7	S601	A-2	TP701	B-7
E702	E-5	IC409	J-4	LV211	Q-1	Q701	D-7	S701	D-7	TP702	D-5
		IC410	H-3	LV301	N-4	Q702	C-7	S702	C-7		
FL201	Q-5	IC411	J-3	LV302	L-2	Q703	C-7			X501	B-3
FL202	Q-5	IC412	H-2	LV303	L-3	Q704	C-7	TP101	N-7	X502	C-3
FL601	C-5	IC413	J-2	LV701	C-6	Q705	D-6	TP102	N-5		
FL602	B-4	IC414	H-1			Q706	C-6	TP103	K-6		





TBC-6 —SOLDERING SIDE—
1-622-421-11(1)
BKU-903

SECTION 8
ELECTRICAL PARTS LIST

8-1. PARTS INFORMATION

1. Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to "improved parts and/or engineering changes" or "standardization of genuine parts".
   This manual's electrical spare parts list indicate the part numbers of "the standardized genuine parts at the present". Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.
2. The parts marked with "s" in the SP column of the electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.
3. Items with no part number and/or no description are not stocked because they are seldom required for routine service.

8-2. ELECTRICAL PARTS LIST

General Purpose Electrical Parts List

Parts that are not in the "reference numbers order list" are shown in following list.
Reference numbers are omitted.

CAPACITOR

. ELECTROLYTIC

Part No.	SP	Description			
1-124-902-00	s	CAP, ELECT	0.47	20%	50V
1-124-791-11	s	CAP, ELECT	1.0	20%	100V
1-124-925-11	s	CAP, ELECT	2.2	20%	100V
1-123-382-00	s	CAP, ELECT	3.3	20%	100V
1-124-927-00	s	CAP, ELECT	4.7	20%	100V
1-123-875-91	s	CAP, ELECT	10	20%	50V
1-124-908-11	s	CAP, ELECT	22	20%	50V
1-124-963-11	s	CAP, ELECT	33	20%	16V
1-124-482-11	s	CAP, ELECT	33	20%	35V
1-124-917-11	s	CAP, ELECT	33	20%	63V
1-124-446-11	s	CAP, ELECT	47	20%	10V
1-124-477-11	s	CAP, ELECT	47	20%	25V
1-124-910-11	s	CAP, ELECT	47	20%	50V
1-124-443-00	s	CAP, ELECT	100	20%	10V
1-126-101-11	s	CAP, ELECT	100	20%	16V
1-124-478-11	s	CAP, ELECT	100	20%	25V
1-124-122-11	s	CAP, ELECT	100	20%	50V
1-124-444-00	s	CAP, ELECT	220	20%	10V
1-124-120-11	s	CAP, ELECT	220	20%	25V
1-124-484-11	s	CAP, ELECT	220	20%	35V
1-124-911-11	s	CAP, ELECT	220	20%	50V
1-124-442-00	s	CAP, ELECT	330	20%	6.3V
1-124-604-00	s	CAP, ELECT	330	20%	10V
1-124-119-00	s	CAP, ELECT	330	20%	16V
1-124-479-11	s	CAP, ELECT	330	20%	25V
1-124-485-11	s	CAP, ELECT	330	20%	35V
1-124-912-11	s	CAP, ELECT	330	20%	50V
1-124-472-11	s	CAP, ELECT	470	20%	10V
1-124-475-11	s	CAP, ELECT	470	20%	16V
1-124-480-11	s	CAP, ELECT	470	20%	25V
1-126-104-11	s	CAP, ELECT	470	20%	35V
1-124-913-11	s	CAP, ELECT	470	20%	50V

. CHIP

Part No.	SP	Description			
1-163-083-00	s	CAP, CHIP CERAMIC	1pF	±0.25pF	50V
1-163-085-00	s	CAP, CHIP CERAMIC	2pF	±0.25pF	50V
1-163-087-00	s	CAP, CHIP CERAMIC	4pF	±0.25pF	50V
1-163-089-00	s	CAP, CHIP CERAMIC	6pF	±0.5pF	50V
1-163-091-00	s	CAP, CHIP CERAMIC	8pF	±0.5pF	50V
1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF	5%	50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF	5%	50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF	5%	50V
1-163-113-00	s	CAP, CHIP CERAMIC	68pF	5%	50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF	5%	50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF	5%	50V
1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF	5%	50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF	5%	50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF	10%	50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF	10%	50V
1-163-015-00	s	CAP, CHIP CERAMIC	3300pF	10%	50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF	10%	50V
1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01	10%	50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015	10%	50V
1-163-033-00	s	CAP, CHIP CERAMIC	0.022		50V
1-163-034-00	s	CAP, CHIP CERAMIC	0.033		50V
1-163-035-00	s	CAP, CHIP CERAMIC	0.047		50V
1-163-036-00	s	CAP, CHIP CERAMIC	0.068		50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V

Part No.	SP	Description

RESISTOR

. CHIP

1-216-295-00	s	RES, CHIP	0	5%	1/10W
1-216-298-00	s	RES, CHIP	2.2	5%	1/10W
1-216-302-00	s	RES, CHIP	2.7	5%	1/10W
1-216-304-00	s	RES, CHIP	3.3	5%	1/10W
1-216-306-00	s	RES, CHIP	3.9	5%	1/10W
1-216-308-00	s	RES, CHIP	4.7	5%	1/10W
1-216-309-00	s	RES, CHIP	5.6	5%	1/10W
1-216-311-00	s	RES, CHIP	6.8	5%	1/10W
1-216-313-00	s	RES, CHIP	8.2	5%	1/10W
1-216-001-00	s	RES, CHIP	10	5%	1/10W
1-216-003-00	s	RES, CHIP	12	5%	1/10W
1-216-005-00	s	RES, CHIP	15	5%	1/10W
1-216-007-00	s	RES, CHIP	18	5%	1/10W
1-216-009-00	s	RES, CHIP	22	5%	1/10W
1-216-011-00	s	RES, CHIP	27	5%	1/10W
1-216-013-00	s	RES, CHIP	33	5%	1/10W
1-216-015-00	s	RES, CHIP	39	5%	1/10W
1-216-017-00	s	RES, CHIP	47	5%	1/10W
1-216-019-00	s	RES, CHIP	56	5%	1/10W
1-216-021-00	s	RES, CHIP	68	5%	1/10W
1-216-023-00	s	RES, CHIP	82	5%	1/10W
1-216-025-00	s	RES, CHIP	100	5%	1/10W
1-216-027-00	s	RES, CHIP	120	5%	1/10W
1-216-029-00	s	RES, CHIP	150	5%	1/10W
1-216-031-00	s	RES, CHIP	180	5%	1/10W
1-216-033-00	s	RES, CHIP	220	5%	1/10W
1-216-035-00	s	RES, CHIP	270	5%	1/10W
1-216-037-00	s	RES, CHIP	330	5%	1/10W
1-216-039-00	s	RES, CHIP	390	5%	1/10W
1-216-041-00	s	RES, CHIP	470	5%	1/10W
1-216-043-00	s	RES, CHIP	560	5%	1/10W
1-216-045-00	s	RES, CHIP	680	5%	1/10W
1-216-047-00	s	RES, CHIP	820	5%	1/10W
1-216-049-00	s	RES, CHIP	1k	5%	1/10W
1-216-051-00	s	RES, CHIP	1.2k	5%	1/10W
1-216-053-00	s	RES, CHIP	1.5k	5%	1/10W
1-216-055-00	s	RES, CHIP	1.8k	5%	1/10W
1-216-057-00	s	RES, CHIP	2.2k	5%	1/10W
1-216-059-00	s	RES, CHIP	2.7k	5%	1/10W
1-216-061-00	s	RES, CHIP	3.3k	5%	1/10W
1-216-063-00	s	RES, CHIP	3.9k	5%	1/10W
1-216-065-00	s	RES, CHIP	4.7k	5%	1/10W
1-216-067-00	s	RES, CHIP	5.6k	5%	1/10W
1-216-069-00	s	RES, CHIP	6.8k	5%	1/10W
1-216-071-00	s	RES, CHIP	8.2k	5%	1/10W

Part No.	SP	Description

1-216-073-00	s	RES, CHIP	10k	5%	1/10W
1-216-075-00	s	RES, CHIP	12k	5%	1/10W
1-216-077-00	s	RES, CHIP	15k	5%	1/10W
1-216-079-00	s	RES, CHIP	18k	5%	1/10W
1-216-081-00	s	RES, CHIP	22k	5%	1/10W
1-216-083-00	s	RES, CHIP	27k	5%	1/10W
1-216-085-00	s	RES, CHIP	33k	5%	1/10W
1-216-087-00	s	RES, CHIP	39k	5%	1/10W
1-216-089-00	s	RES, CHIP	47k	5%	1/10W
1-216-091-00	s	RES, CHIP	56k	5%	1/10W
1-216-093-00	s	RES, CHIP	68k	5%	1/10W
1-216-095-00	s	RES, CHIP	82k	5%	1/10W
1-216-097-00	s	RES, CHIP	100k	5%	1/10W
1-216-099-00	s	RES, CHIP	120k	5%	1/10W
1-216-101-00	s	RES, CHIP	150k	5%	1/10W
1-216-103-00	s	RES, CHIP	180k	5%	1/10W
1-216-105-00	s	RES, CHIP	220k	5%	1/10W
1-216-107-00	s	RES, CHIP	270k	5%	1/10W
1-216-109-00	s	RES, CHIP	330k	5%	1/10W
1-216-111-00	s	RES, CHIP	390k	5%	1/10W
1-216-113-00	s	RES, CHIP	470k	5%	1/10W
1-216-115-00	s	RES, CHIP	560k	5%	1/10W
1-216-117-00	s	RES, CHIP	680k	5%	1/10W
1-216-119-00	s	RES, CHIP	820k	5%	1/10W
1-216-121-00	s	RES, CHIP	1.0M	5%	1/10W
1-216-123-00	s	RES, CHIP	1.2M	5%	1/10W
1-216-125-00	s	RES, CHIP	1.5M	5%	1/10W
1-216-127-00	s	RES, CHIP	1.8M	5%	1/10W
1-216-129-00	s	RES, CHIP	2.2M	5%	1/10W
1-216-131-00	s	RES, CHIP	2.7M	5%	1/10W
1-216-133-00	s	RES, CHIP	3.3M	5%	1/10W

Ref. No	Parts No.	SP	Description
TBC-6 BOARD			
This board includes the DUS-151 board.			
	1-623-825-11	o	PRINTED CIRCUIT BOARD, DUS-200
C107	1-131-351-00	s	TANTALUM 4.7 10% 35V
C135	1-107-158-00	s	MICA 30PF 5% 500V
C136	1-107-167-00	s	MICA 75PF 5% 50V
C204	1-123-622-00	s	ELECT 22 20% 16V
C207	1-107-160-00	s	MICA 36PF 5% 500V
C214	1-107-207-00	s	MICA 16PF 5% 500V
C215	1-123-622-00	s	ELECT 22 20% 16V
C217	1-131-349-00	s	TANTALUM 2.2 10% 35V
C218	1-130-478-00	s	MYLAR 0.0039 5% 50V
C219	1-163-081-00	s	CERAMIC CHIP 0.22 25V
C221	1-107-159-00	s	MICA 33PF 5% 500V
C223	1-131-353-00	s	TANTALUM 10 10% 35V
C224	1-130-478-00	s	MYLAR 0.0039 5% 50V
C225	1-162-568-11	s	CERAMIC CHIP 0.33 25V
C226	1-123-622-00	s	ELECT 22 20% 16V
C229	1-162-888-11	s	CERAMIC 560PF 5% 50V
C230	1-124-445-00	s	ELECT 100 20% 16V
C232	1-123-622-00	s	ELECT 22 20% 16V
C234	1-162-568-11	s	CERAMIC CHIP 0.33 25V
C235	1-107-165-00	s	MICA 56PF 5% 50V
C252	1-107-168-00	s	MICA 91PF 1% 100V
C260	1-124-247-00	s	ELECT 10 20% 25V
C301	1-124-247-00	s	ELECT 10 20% 25V
C308	1-107-168-00	s	MICA 91PF 1% 100V
C321	1-162-638-11	s	CERAMIC CHIP 1 16V
C322	1-131-341-00	s	TANTALUM 0.1 10% 35V
C323	1-124-242-00	s	ELECT 33 20% 25V
C326	1-124-242-00	s	ELECT 33 20% 25V
C329	1-124-242-00	s	ELECT 33 20% 25V
C331	1-124-242-00	s	ELECT 33 20% 25V
C337	1-162-637-11	s	CERAMIC CHIP 0.47 16V
C340	1-124-247-00	s	ELECT 10 20% 25V
C360	1-124-242-00	s	ELECT 33 20% 25V
C366	1-124-242-00	s	ELECT 33 20% 25V
C371	1-131-345-00	s	TANTALUM 0.47 10% 35V
C375	1-124-242-00	s	ELECT 33 20% 25V
C382	1-124-242-00	s	ELECT 33 20% 25V
C384	1-124-242-00	s	ELECT 33 20% 25V
C386	1-162-637-11	s	CERAMIC CHIP 0.47 16V
C501	1-162-568-11	s	CERAMIC CHIP 0.33 25V
C519	1-124-247-00	s	ELECT 10 20% 25V
C553	1-123-622-00	s	ELECT 22 20% 16V
C554	1-123-622-00	s	ELECT 22 20% 16V
C565	1-127-506-00	s	ELECT(SOLID) 1 20% 25V
C574	1-131-345-00	s	TANTALUM 0.47 10% 35V
C575	1-161-494-00	s	CERAMIC 0.022 25V
C576	1-161-494-00	s	CERAMIC 0.022 25V
C606	1-107-166-00	s	MICA 62PF 5% 50V
C613	1-124-247-00	s	ELECT 10 20% 25V
C623	1-124-247-00	s	ELECT 10 20% 25V
C625	1-107-166-00	s	MICA 62PF 5% 50V
C633	1-124-247-00	s	ELECT 10 20% 25V
C635	1-131-341-00	s	TANTALUM 0.1 10% 35V
C651	1-163-123-00	s	CERAMIC CHIP 180PF 5% 50V
C652	1-124-445-00	s	ELECT 100 20% 16V
C702	1-162-638-11	s	CERAMIC CHIP 1 16V
C720	1-162-888-11	s	CERAMIC 560PF 5% 50V
C724	1-162-638-11	s	CERAMIC CHIP 1 16V
C733	1-124-445-00	s	ELECT 100 20% 16V
C738	1-124-445-00	s	ELECT 100 20% 16V
CF501	1-527-605-00	s	FILTER, CERAMIC
CF502	1-527-605-00	s	FILTER, CERAMIC
CN105	1-506-747-21	o	PIN, DIN, CONNECTOR (DIP) 64P
CN106	1-506-747-21	o	PIN, DIN, CONNECTOR (DIP) 64P
CN401	1-564-494-11	o	PIN, CONNECTOR 60P
D101	8-719-101-23	s	1SS123
D201	8-719-101-23	s	1SS123
D202	8-719-101-23	s	1SS123
D203	8-719-101-23	s	1SS123
D205	8-719-101-23	s	1SS123
D211	8-719-101-23	s	1SS123
D212	8-719-104-10	s	1SS99
D213	8-719-104-10	s	1SS99
D214	8-719-104-10	s	1SS99
D301	8-719-101-23	s	1SS123
D302	8-719-101-23	s	1SS123
D305	8-719-915-43	s	FC54M
D306	8-719-915-43	s	FC54M
D307	8-719-100-21	s	RD3.9EB2
D308	8-719-105-73	s	RD4.7M-B2
D309	8-719-100-03	s	1S2835
D310	8-719-100-61	s	RD11EB2
D311	8-719-938-98	s	FC51M
D312	8-719-938-98	s	FC51M
D313	8-719-938-98	s	FC51M
D314	8-719-101-23	s	1SS123
D315	8-719-101-23	s	1SS123
D503	8-719-101-23	s	1SS123
D504	8-719-101-23	s	1SS123
D505	8-719-100-57	s	RD10E-B2
D601	8-719-101-23	s	1SS123
D602	8-719-100-05	s	1S2837
D603	8-719-101-23	s	1SS123
D604	8-719-100-05	s	1S2837
D606	8-719-101-97	s	1SS97-1
D607	8-719-105-91	s	RD5.6M-B2
D608	8-719-105-91	s	RD5.6M-B2
D701	8-719-101-23	s	1SS123
D702	8-719-100-03	s	1S2835
FL201	1-236-048-11	s	FILTER, BAND PASS
FL202	1-236-049-11	s	FILTER, BAND PASS
FL601	1-235-474-11	s	FILTER, LOW PASS
FL602	1-235-469-11	s	FILTER, LOW PASS
FL701	1-236-050-11	s	FILTER, LOW PASS
FL702	1-235-584-11	s	FILTER, LOW PASS

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List."

Ref. No	Parts No.	SP	Description
IC101	8-749-901-24	s	BX1464 (SONY)
IC102	8-759-908-17	s	TL082CPS (TI)
IC103	8-759-938-43	s	MB40578P (FUJITSU)
IC104	8-759-014-96	s	MC1496P (MOTOROLA)
IC105	8-759-914-44	s	TL431CLPB (TI)
IC201	8-750-000-46	s	CX872 (SONY)
IC203	8-741-126-40	s	BX1264L (SONY)
IC204	8-759-908-59	s	CX859 (SONY)
IC205	8-759-100-94	s	uPC358G2 (NEC)
IC211	8-759-941-27	s	MB4002PF (FUJITSU)
IC212	8-759-918-71	s	CX23065 (SONY)
IC213	8-759-908-17	s	TL082CPS (TI)
IC214	8-759-902-88	s	SN74LS123NS (TI)
IC215	8-759-929-78	s	SN74LS04NS (TI)
IC216	8-759-907-81	s	SN74LS221NS (TI)
IC217	8-759-929-75	s	SN74LS01NS (TI)
IC301	8-759-908-17	s	TL082CPS (TI)
IC302	8-759-902-88	s	SN74LS123NS (TI)
IC303	8-759-941-27	s	MB4002PF (FUJITSU)
IC304	8-749-901-20	s	BX1460 (SONY)
IC306	8-749-901-21	s	BX1461 (SONY)
IC307	8-759-207-65	s	CXD1045Q (SONY)
IC308	8-759-907-81	s	SN74LS221NS (TI)
IC309	8-759-918-71	s	CX23065 (SONY)
IC310	8-759-908-17	s	TL082CPS (TI)
IC311	8-759-902-88	s	SN74LS123NS (TI)
IC312	8-759-902-88	s	SN74LS123NS (TI)
IC313	8-759-941-17	s	SN74LS06NS (TI)
IC315	8-759-907-81	s	SN74LS221NS (TI)
IC316	8-759-908-17	s	TL082CPS (TI)
IC317	8-759-908-17	s	TL082CPS (TI)
IC318	8-749-901-22	s	BX1463 (SONY)
IC319	8-759-201-47	s	TA7357AP (TOSHIBA)
IC322	8-759-941-27	s	MB4002PF (FUJITSU)
IC323	8-759-907-81	s	SN74LS221NS (TI)
IC324	8-759-012-00	s	MC10H116M (MOTOROLA)
IC325	8-759-012-13	s	MC10H125M (MOTOROLA)
IC326	8-759-908-17	s	TL082CPS (TI)
IC327	8-759-908-17	s	TL082CPS (TI)
IC328	8-759-945-29	s	TL601CPS (TI)
IC401	8-752-322-72	s	CXK1202S (SONY)
IC402	8-759-933-49	s	CXD1021Q (SONY)
IC403	8-759-933-51	s	CXD1020Q (SONY)
IC404	8-759-933-51	s	CXD1020Q (SONY)
IC405	8-759-929-78	s	SN74LS04NS (TI)
IC406	8-759-942-28	s	CXD1022CQ (SONY)
IC407	8-759-208-76	s	CXD1023AQ (SONY)
IC408	8-752-323-51	s	CXK5864AM-70L (SONY)
IC409	8-752-323-51	s	CXK5864AM-70L (SONY)
IC410	8-752-323-51	s	CXK5864AM-70L (SONY)
IC411	8-752-323-51	s	CXK5864AM-70L (SONY)
IC412	8-752-323-51	s	CXK5864AM-70L (SONY)
IC413	8-752-323-51	s	CXK5864AM-70L (SONY)
IC414	8-752-323-51	s	CXK5864AM-70L (SONY)
IC415	8-752-323-51	s	CXK5864AM-70L (SONY)
IC416	8-759-926-77	s	SN74HC541NS (TI)
IC417	8-759-926-77	s	SN74HC541NS (TI)
IC418	8-759-929-73	s	SN74LS00NS (TI)
IC419	8-759-929-73	s	SN74LS00NS (TI)
IC501	8-749-901-19	s	BX1459 (SONY)

Ref. No	Parts No.	SP	Description
IC502	8-757-930-11	s	CX7930A (SONY)
IC503	8-759-907-81	s	SN74LS221NS (TI)
IC504	8-759-206-28	s	TC74HC123F (TI)
IC505	8-759-908-39	s	CX7998 (SONY)
IC506	8-759-908-17	s	TL082CPS (TI)
IC507	8-759-206-28	s	TC74HC123F (TI)
IC508	8-759-907-81	s	SN74LS221NS (TI)
IC509	8-759-945-29	s	TL601CPS (TI)
IC510	8-759-918-71	s	CX23065 (SONY)
IC511	8-759-207-66	s	CXD1024Q (SONY)
IC512	8-759-929-73	s	SN74LS00NS (TI)
IC513	8-759-929-78	s	SN74LS04NS (TI)
IC514	8-757-930-11	s	CX7930A (SONY)
IC515	8-759-918-35	s	CX20162 (SONY)
IC516	8-749-901-20	s	BX1460 (SONY)
IC518	8-759-907-81	s	SN74LS221NS (TI)
IC519	8-759-918-71	s	CX23065 (SONY)
IC520	8-759-945-29	s	TL601CPS (TI)
IC521	8-759-908-17	s	TL082CPS (TI)
IC522	8-759-100-93	s	uPC393G2 (NEC)
IC523	8-759-908-17	s	TL082CPS (TI)
IC524	8-759-945-29	s	TL601CPS (TI)
IC525	8-759-205-06	s	TC74HC74F (TOSHIBA)
IC526	8-759-945-29	s	TL601CPS (TI)
IC527	8-759-900-82	s	TL082CP (TI)
IC601	8-749-901-03	s	BX389L (ROHM)
IC602	8-759-200-60	s	TA7060AP (TOSHIBA)
IC603	8-759-602-06	s	M5109P (MITSUBISHI)
IC607	8-752-321-89	s	CXL5003P (SONY)
IC608	8-749-901-03	s	BX389L (ROHM)
IC609	8-759-708-09	s	NJM78L09A (JRC)
IC701	8-759-933-52	s	MB40778P (FUJITSU)
IC702	8-759-100-96	s	uPC4558G2 (NEC)
IC703	8-759-907-81	s	SN74LS221NS (TI)
IC704	8-749-900-77	s	BX1333L (ROHM)
IC705	8-741-145-60	s	BX1456 (SONY)
IC706	8-749-900-63	s	BX365AL (ROHM)
IC707	8-749-901-09	s	BX366AL (ROHM)
IC708	8-749-901-09	s	BX366AL (ROHM)
IC709	8-759-100-95	s	uPC324G2 (NEC)
IC710	8-759-100-96	s	uPC4558G2 (NEC)
IC711	8-752-015-81	s	CX20158 (SONY)
IC712	8-759-914-44	s	TL431CLPB (TI)
IC713	8-759-700-11	s	NJM78M05A (JRC)
IC714	8-759-700-20	s	NJM79M05A (JRC)
L1	1-421-329-00	s	CHOKE
L2	1-421-329-00	s	CHOKE
L3	1-421-329-00	s	CHOKE
L4	1-421-329-00	s	CHOKE
L5	1-421-329-00	s	CHOKE
L101	1-410-470-11	s	MICRO 10
L102	1-410-470-11	s	MICRO 10
L103	1-410-470-11	s	MICRO 10
L104	1-410-470-11	s	MICRO 10
L105	1-410-470-11	s	MICRO 10
L106	1-410-470-11	s	MICRO 10
L107	1-410-470-11	s	MICRO 10
L108	1-410-468-11	s	MICRO 6.8
L109	1-410-471-11	s	MICRO 12
L201	1-410-470-11	s	MICRO 10

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List."

Ref. No	Parts No.	SP	Description
L202	1-410-473-11	s	MICRO 18
L203	1-410-476-11	s	MICRO 33
L204	1-410-470-11	s	MICRO 10
L205	1-410-489-11	s	MICRO 390
L211	1-410-476-11	s	MICRO 33
L301	1-410-470-11	s	MICRO 10
L302	1-410-470-11	s	MICRO 10
L303	1-410-470-11	s	MICRO 10
L304	1-410-476-11	s	MICRO 33
L305	1-410-470-11	s	MICRO 10
L306	1-408-879-21	s	MICRO 0.47
L307	1-410-470-11	s	MICRO 10
L308	1-410-470-11	s	MICRO 10
L309	1-410-470-11	s	MICRO 10
L310	1-410-470-11	s	MICRO 10
L501	1-410-470-11	s	MICRO 10
L502	1-410-470-11	s	MICRO 10
L503	1-410-476-11	s	MICRO 33
L504	1-410-470-11	s	MICRO 10
L505	1-410-470-11	s	MICRO 10
L507	1-410-470-11	s	MICRO 10
L508	1-410-470-11	s	MICRO 10
L601	1-410-470-11	s	MICRO 10
L602	1-410-470-11	s	MICRO 10
L603	1-408-424-00	s	MICRO 180
L604	1-408-422-00	s	MICRO 120
L605	1-410-470-11	s	MICRO 10
L606	1-410-470-11	s	MICRO 10
L607	1-410-470-11	s	MICRO 10
L608	1-410-470-11	s	MICRO 10
L609	1-408-422-00	s	MICRO 120
L610	1-410-470-11	s	MICRO 10
L611	1-410-470-11	s	MICRO 10
L701	1-410-470-11	s	MICRO 10
L703	1-410-470-11	s	MICRO 10
L704	1-410-470-11	s	MICRO 10
L705	1-410-470-11	s	MICRO 10
L706	1-410-470-11	s	MICRO 10
L709	1-410-470-11	s	MICRO 10
L710	1-410-470-11	s	MICRO 10
L711	1-410-470-11	s	MICRO 10
L712	1-410-470-11	s	MICRO 10
L713	1-410-470-11	s	MICRO 10
L714	1-410-470-11	s	MICRO 10
LV211	1-408-635-00	s	FIXED 10.7
LV301	1-408-635-00	s	FIXED 10.7
LV302	1-410-286-11	s	VAR 1.0
LV303	1-410-286-11	s	VAR 1.0
LV701	1-408-532-00	s	VAR 47
Q101	8-729-100-76	s	2SA812
Q102	8-729-100-66	s	2SC1623
Q103	8-729-105-08	s	2SA1330
Q104	8-729-100-66	s	2SC1623
Q105	8-729-100-66	s	2SC1623
Q106	8-729-100-66	s	2SC1623
Q107	8-729-100-66	s	2SC1623
Q201	8-729-100-66	s	2SC1623
Q202	8-729-100-66	s	2SC1623
Q203	8-729-100-66	s	2SC1623

Ref. No	Parts No.	SP	Description
Q204	8-729-100-76	s	2SA812
Q205	8-729-100-66	s	2SC1623
Q206	8-729-100-66	s	2SC1623
Q207	8-729-100-66	s	2SC1623
Q211	8-729-100-66	s	2SC1623
Q212	8-729-100-66	s	2SC1623
Q301	8-729-100-66	s	2SC1623
Q302	8-729-100-66	s	2SC1623
Q305	8-729-100-66	s	2SC1623
Q306	8-729-100-66	s	2SC1623
Q307	8-729-100-76	s	2SA812
Q308	8-729-100-76	s	2SA812
Q309	8-729-202-38	s	2SC3326N
Q501	8-729-109-44	s	2SK94
Q502	8-729-100-66	s	2SC1623
Q503	8-729-100-66	s	2SC1623
Q504	8-729-100-66	s	2SC1623
Q601	8-729-100-66	s	2SC1623
Q602	8-729-100-76	s	2SA812
Q603	8-729-100-76	s	2SA812
Q604	8-729-100-66	s	2SC1623
Q605	8-729-100-66	s	2SC1623
Q607	8-729-100-76	s	2SA812
Q608	8-729-100-66	s	2SC1623
Q609	8-729-100-76	s	2SA812
Q610	8-729-102-06	s	2SC2223
Q611	8-729-102-06	s	2SC2223
Q612	8-729-102-06	s	2SC2223
Q613	8-729-100-66	s	2SC1623
Q614	8-729-100-66	s	2SC1623
Q615	8-729-100-66	s	2SC1623
Q616	8-729-100-66	s	2SC1623
Q617	8-729-100-66	s	2SC1623
Q618	8-729-100-66	s	2SC1623
Q619	8-729-100-66	s	2SC1623
Q620	8-729-100-66	s	2SC1623
Q621	8-729-100-66	s	2SC1623
Q623	8-729-100-66	s	2SC1623
Q624	8-729-100-66	s	2SC1623
Q626	8-729-100-66	s	2SC1623
Q627	8-729-100-66	s	2SC1623
Q701	8-729-100-76	s	2SA812
Q703	8-729-100-66	s	2SC1623
Q704	8-729-100-66	s	2SC1623
Q705	8-729-100-66	s	2SC1623
Q706	8-729-100-76	s	2SA812
Q707	8-729-177-33	s	2SD773-4
R102	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R110	1-216-669-11	s	METAL CHIP 5.6k 0.5% 1/10W
R111	1-216-655-11	s	METAL CHIP 1.5k 0.5% 1/10W
R114	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R115	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R116	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R117	1-216-669-11	s	METAL CHIP 5.6k 0.5% 1/10W
R122	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R123	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R127	1-216-633-11	s	METAL CHIP 180 0.5% 1/10W
R128	1-216-680-11	s	METAL CHIP 16k 0.5% 1/10W
R138	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R143	1-216-670-11	s	METAL CHIP 6.2k 0.5% 1/10W
R205	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R223	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W

Parts that are not listed in the "reference numbers order list" are shown in the "General Purpose Electrical Parts List."

Ref. No	Parts No.	SP	Description
R224	1-216-639-11	s	METAL CHIP 330 0.5% 1/10W
R225	1-216-655-11	s	METAL CHIP 1.5k 0.5% 1/10W
R239	1-216-665-11	s	METAL CHIP 3.9k 0.5% 1/10W
R248	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R256	1-216-748-11	s	METAL CHIP 39k 5% 1/10W
R301	1-216-690-11	s	METAL CHIP 43k 0.5% 1/10W
R302	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R303	1-216-655-11	s	METAL CHIP 1.5k 0.5% 1/10W
R304	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R305	1-216-683-11	s	METAL CHIP 22k 0.5% 1/10W
R306	1-216-683-11	s	METAL CHIP 22k 0.5% 1/10W
R307	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R308	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R309	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R310	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R311	1-216-683-11	s	METAL CHIP 22k 0.5% 1/10W
R312	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R313	1-216-669-11	s	METAL CHIP 5.6k 0.5% 1/10W
R314	1-216-669-11	s	METAL CHIP 5.6k 0.5% 1/10W
R329	1-216-665-11	s	METAL CHIP 3.9k 0.5% 1/10W
R331	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R332	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R341	1-216-682-11	s	METAL CHIP 20k 0.5% 1/10W
R346	1-216-674-11	s	METAL CHIP 9.1k 0.5% 1/10W
R382	1-216-660-11	s	METAL CHIP 2.4k 0.5% 1/10W
R399	1-216-665-11	s	METAL CHIP 3.9k 0.5% 1/10W
R404	1-216-748-11	s	METAL CHIP 39k 5% 1/10W
R522	1-216-683-11	s	METAL CHIP 22k 0.5% 1/10W
R523	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R524	1-216-665-11	s	METAL CHIP 3.9k 0.5% 1/10W
R525	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R526	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R527	1-216-690-11	s	METAL CHIP 43k 0.5% 1/10W
R531	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R532	1-216-680-11	s	METAL CHIP 16k 0.5% 1/10W
R533	1-216-659-11	s	METAL CHIP 2.2k 0.5% 1/10W
R535	1-216-683-11	s	METAL CHIP 22k 0.5% 1/10W
R536	1-216-672-11	s	METAL CHIP 7.5k 0.5% 1/10W
R537	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R538	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R539	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R540	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R541	1-216-664-11	s	METAL CHIP 3.6k 0.5% 1/10W
R542	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R561	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R562	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R564	1-216-664-11	s	METAL CHIP 3.6k 0.5% 1/10W
R565	1-216-668-11	s	METAL CHIP 5.1k 0.5% 1/10W
R567	1-216-680-11	s	METAL CHIP 16k 0.5% 1/10W
R587	1-216-699-11	s	METAL CHIP 100k 0.5% 1/10W
R588	1-216-699-11	s	METAL CHIP 100k 0.5% 1/10W
R592	1-249-423-11	s	CARBON 3.3k 5% 1/4W
R593	1-249-429-11	s	CARBON 10k 5% 1/4W
R594	1-249-428-11	s	CARBON 8.2k 5% 1/4W
R595	1-249-421-11	s	CARBON 2.2k 5% 1/4W
R596	1-247-895-00	s	CARBON 470k 5% 1/4W
R610	1-216-748-11	s	METAL CHIP 39k 5% 1/10W
R638	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R639	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R660	1-216-659-11	s	METAL CHIP 2.2k 0.5% 1/10W
R695	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R701	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R702	1-216-659-11	s	METAL CHIP 2.2k 0.5% 1/10W
R703	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R705	1-216-665-11	s	METAL CHIP 3.9k 0.5% 1/10W

Ref. No	Parts No.	SP	Description
R707	1-216-682-11	s	METAL CHIP 20k 0.5% 1/10W
R709	1-216-660-11	s	METAL CHIP 2.4k 0.5% 1/10W
R710	1-216-645-11	s	METAL CHIP 560 0.5% 1/10W
R714	1-216-636-11	s	METAL CHIP 240 0.5% 1/10W
R716	1-216-639-11	s	METAL CHIP 330 0.5% 1/10W
R717	1-216-639-11	s	METAL CHIP 330 0.5% 1/10W
R718	1-216-625-11	s	METAL CHIP 82 0.5% 1/10W
R719	1-216-624-11	s	METAL CHIP 75 0.5% 1/10W
R720	1-216-624-11	s	METAL CHIP 75 0.5% 1/10W
R723	1-216-641-11	s	METAL CHIP 390 0.5% 1/10W
R724	1-216-641-11	s	METAL CHIP 390 0.5% 1/10W
R737	1-216-699-11	s	METAL CHIP 100k 0.5% 1/10W
R743	1-216-699-11	s	METAL CHIP 100k 0.5% 1/10W
R749	1-216-624-11	s	METAL CHIP 75 0.5% 1/10W
R754	1-216-624-11	s	METAL CHIP 75 0.5% 1/10W
R755	1-216-624-11	s	METAL CHIP 75 0.5% 1/10W
R763	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R764	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
RV101	1-230-519-11	s	VAR, METAL GLAZE 470
RV102	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV103	1-230-520-11	s	VAR, METAL GLAZE 1k
RV104	1-230-524-11	s	VAR, METAL GLAZE 22k
RV201	1-230-524-11	s	VAR, METAL GLAZE 22k
RV202	1-230-520-11	s	VAR, METAL GLAZE 1k
RV203	1-237-259-11	s	VAR, METAL FILM 2k
RV204	1-230-522-11	s	VAR, METAL GLAZE 4.7k
RV207	1-230-523-11	s	VAR, METAL GLAZE 10k
RV208	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV209	1-230-523-11	s	VAR, METAL GLAZE 10k
RV210	1-230-523-11	s	VAR, METAL GLAZE 10k
RV211	1-230-523-11	s	VAR, METAL GLAZE 10k
RV212	1-230-522-11	s	VAR, METAL GLAZE 4.7k
RV213	1-230-519-11	s	VAR, METAL GLAZE 470
RV221	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV222	1-237-258-11	s	VAR, METAL FILM 1k
RV223	1-230-523-11	s	VAR, METAL GLAZE 10k
RV301	1-230-519-11	s	VAR, METAL GLAZE 470
RV302	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV303	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV304	1-230-519-11	s	VAR, METAL GLAZE 470
RV305	1-230-523-11	s	VAR, METAL GLAZE 10k
RV307	1-230-524-11	s	VAR, METAL GLAZE 22k
RV308	1-230-524-11	s	VAR, METAL GLAZE 22k
RV309	1-230-519-11	s	VAR, METAL GLAZE 470
RV501	1-230-522-11	s	VAR, METAL GLAZE 4.7k
RV502	1-230-519-11	s	VAR, METAL GLAZE 470
RV601	1-228-452-00	s	VAR, CERMET 50
RV602	1-230-520-11	s	VAR, METAL GLAZE 1k
RV603	1-230-523-11	s	VAR, METAL GLAZE 10k
RV604	1-230-519-11	s	VAR, METAL GLAZE 470
RV605	1-230-520-11	s	VAR, METAL GLAZE 1k
RV606	1-230-521-11	s	VAR, METAL GLAZE 2.2k
RV607	1-230-519-11	s	VAR, METAL GLAZE 470
RV701	1-230-523-11	s	VAR, METAL GLAZE 10k
RV702	1-230-522-11	s	VAR, METAL GLAZE 4.7k
RV703	1-230-520-11	s	VAR, METAL GLAZE 1k
RV704	1-230-523-11	s	VAR, METAL GLAZE 10k
RV705	1-230-519-11	s	VAR, METAL GLAZE 470

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Ref. No	Parts No.	SP	Description
S301	1-553-563-00	s	ROTARY "VIDEO PHASE SELECT"
S402	1-553-977-00	s	SLIDE "V AXIS NOR/INV"
S403	1-553-977-00	s	SLIDE "SYNC 8H DELAY ON/OFF"
S501	1-516-925-21	s	DIP "V BLK LINE SELECT"
S502	1-516-925-21	s	DIP "V BLK LINE SELECT"
S503	1-552-509-00	s	DIP "V BLK LINE SELECT"
S601	1-553-977-00	s	SLIDE "BEAT CANCELL ON/OFF"
S701	1-553-977-00	s	SLIDE "BLACK LEVEL SELECT"
X501	1-567-646-11	s	OSCILLATOR, CRYSTAL 14.1875MHz
X502	1-567-891-11	s	OSCILLATOR, CRYSTAL 17.734475MHz

DUS-151 BOARD

All of the component parts on the DUS-151 board are supplied together when you order BKU-903.

CN401	1-562-485-11	o	60P

8-3. PACKING MATERIAL (SUPPLIED)

Parts No.	SP	Description
2-122-382-01	o	INDIVIDUAL CARTON
2-122-383-01	o	SPACER
2-122-384-01	o	CUSHION
2-124-614-01	o	PAD